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ADAPTING UNESCO MAB-PRINCIPLES TO EAST USAMBARA AREA

Report of a Short Term Consultancy

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ADAPTING UNESCO MAB-PRINCIPLES TO EAST USAMBARA AREA, TANZANIA

Report of a Short Term Consultancy

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SUMMARY

Process and Goals

The East Usambara Biosphere Reserve (EUBR) in Tanzania was nominated in November 2000. This report gives an outline of the process and results of a short term consultancy aimed at formulating a five-year strategy and a one-year action plan for EUBR.

The process used to formulate the strategy included a literature survey, interviews and discussions with local, regional, national and international professionals, field visits and compilation brainstorming to finalise the report.

The main goals of the strategy are: (1) Ensuring the effective continuation of the process towards a fully functional Biosphere Reserve (BR); (2) Guaranteeing the high conservation values of the unique rainforests combined with the community based management of this natural resource; and (3) Linking the area and its development with Tanzanian development plans and with those of the international community.

Strategy

The strategy is based on a vision that EUBR will have strong local and national involvement with a commitment toward commonly agreed sustainable development goals.

Administration and Management of the Biosphere Reserve (BR)

UNESCO's Man and Biosphere (MAB) concept will enable the formation of a neutral, co-operative, widely visible, and accepted development unit for the area. The international status will help in getting various stakeholders and international actors to discuss the development priorities and to decide about needed actions. Moreover, international status will help direct funds for chosen objectives.

- Arranging the administration is the first priority in creating a functioning BR. A position for a full-time BR co-ordinator will be established and the office of the co-ordinator will be within the Tanga Region office.
- A locally governed BR co-ordination committee will be formed to choose BR priorities, deliver information and trigger discussion. The committee will also channel funds to the chosen priority targets, maintain discussions about getting a national BR policy and maintain consistent relationships between the various BRs.
- The secretary of the BR committee will be the BR co-ordinator and the members of the committee will be relevant stakeholders from the region, districts and the villages (administration, enterprises, villagers, Non-profit Government Organizations – NGOs, research and funding organisations).
- The first tasks of the committee are to work on guaranteeing national funding for BR continuity and basic actions, to prioritise the work to be done in the BR, and to start compiling the BR management guidelines.

Nature Conservation and Research

The main values of EUBR are: (1) Nature - a unique biodiversity due to East Usambara being an essential part of the Eastern Arc Mountains and adjacent coastal forests which complex into one of the top 25 biodiversity hot spots in the world; (2) Water - the mountains are a very important water catchment area for the Tanga Region; and (3) A remarkable 150-year history of nature research and successful pilot development projects - including farm forestry and development of energy saving stoves.

The principal biodiversity, landscape and environmental values of EUBR are in the rain forests, which are under legal protection. Despite this protection, major threats to the rain forests still result from human activity, including illegal forest use, careless use of fire, and unsustainable forest management.

- To maintain the biological values BR development strategy is based on co-operation with local people and development actions that respect their values.
- Initially, development will be based on the continuation of rural development projects that have already begun (e.g. the East Usambara Conservation Area Management Programme – EUCAMP). Within these projects are included village forestry activity and intensification of agricultural land use.
- With the co-operation of relevant partners from within and outside the area, new projects will be started according to the chosen priorities and available funds.
- Funding from international, national, regional and local sources will be channelled through the co-ordination committee to mutually agreed targets. Participation of international donors to the BR co-ordination committee will enable planning of mutual projects for maximum benefit of both the local people and the area in general.

Inquiries and studies of socio-economic background will be started together with the revision of the outer boundaries of the reserve. BR delineation should coincide with administrative boundaries (i.e., village boundaries) in order to effectively conduct studies and follow the influence of the actions taken. Exact socio-economic background data is also needed from these areas.

Linking the BR to National, Sectoral Policies

National and international sectoral programmes and strategies will be incorporated into the management and co-ordination document concerning EUBR to guarantee maximum participation, efficiency of the actions and publicity.

Awareness about EUBR will be increased via promotion at all local events and actions. Extensive scientific material from the area will be used to write articles and reports as a means to raise international interest. Participation in all levels of meetings will be encouraged, and these forums will also be used to promote the area by discussing the approach and results.

1. INTRODUCTION

In November 2000 over 100,000 ha of East Usambara mountain range and adjacent villages in Tanzania were nominated as a Biosphere Reserve. The area, along with its c.a. 155,000 permanent inhabitants, is now part of UNESCO's Man and Biosphere (MAB) program which contains over 400 sites of excellence worldwide.

The East Usambara area is renowned for its extraordinary richness of nature, long history of biological studies and a botanical garden, and recently also for the versatile nature-related development projects. East Usambara area thus deserves its place as an important part of the world network of biosphere reserves. This paper briefly summarises the long run of East Usambara area in becoming a Biosphere Reserve (BR), and specifies the MAB program and BR essentials together with the information concerning the area at present. The essential MAB issues are also reviewed.

The objective of this paper is to compile a strategy and a short term action plan to further develop the East Usambara Biosphere Reserve (EUBR) into a fully functional part of the global BR network.

This work is a part of the East Usambara Conservation Area Management Programme (EUCAMP) project funded by Finnish and Tanzanian Governments and The European Union.

2. GOALS OF THE CONSULTANCY

The purpose of this consultancy is to evaluate the ongoing MAB activities and create a co-operation and management strategy for the EUBR.

The main goals of the strategy are:

- (1) Guaranteeing the high conservation values of the unique rainforests.
- (2) Combining these values with the community based management of this natural resource.
- (3) Linking the area and its development with Tanzanian development plans and with the interests of the international community.
- (4) Ensuring the effective continuation of the process towards a fully functional BR.

The specific tasks concerning the process to formulate the strategy are:

- (1) Assessing the status and progress level of East Usambara MAB area management as compared to other African or tropical MAB areas.
- (2) Assessing the present set up and validity of MAB zoning including core areas, buffer zones, transition areas and settlement areas, and advising and facilitating in updating the zoning when necessary.
- (3) Advising and facilitating in the establishment of a permanent linkage between the MAB concept and Community Based Natural Resource Management in East Usambara.

- (4) Advising and facilitating the establishment of a permanent linkage between the MAB concept and poverty reduction programmes both within Tanzania and internationally.
- (5) Advising in the establishment of all the necessary international networks (UNESCO-based and others) needed for successful international MAB co-operation.
- (6) Assessing the status and level of biodiversity along with other research, particularly from a UNESCO-based international angle, as well as advising in strengthening the research when necessary.
- (7) Assessing and facilitating the establishment of efficient in-country co-ordination within all Tanzanian MAB-areas.
- (8) Preparing a one-year action plan and a five-year co-ordination and management strategy and development plan for East Usambara MAB area.

The strategy will be compiled with consideration to the relevant Tanzanian National development plans for UNESCO / MAB BRs and the principles stated by the Tanzanian environmental, forest and other relevant laws, acts and policies.

All tasks specified above are analysed by individual task in Chapters 7 and 9, wherein the proposed actions have likewise been summarised. The vision for future work, based on the present materials, is provided in Chapter 8. The overall three-year strategy is presented in Chapter 11 in a logical framework format.

3. PROCEDURES AND SOURCES OF INFORMATION

The work is divided into four components which are: (1) Reflecting the goals of the consultancy and formulating the Terms of Reference (TOR); (2) Digging archives for background information; (3) Interviewing the relevant actors and stakeholders of the area as well as its administration; and (4) Compiling the strategy and action plan with an *ad hoc* working group in Tanga.

Terms of Reference for the Process and Period of Preparing the Report

Formulation of the working principles and TOR started in January 2002. The working period in Tanga was between the 14th of February, 2002 and the 3rd of September, 2002. The writing phase continued until the 31st of March, 2002. TOR and the preliminary questions that were asked are presented in Annex A. The time-table of the Tanga field period is provided in Annex B.

Literature

The Usambara area has been a target of international interest and importance for approximately 150 years. There exists a huge background of written information and the bibliographies done thus far were browsed. The information (metadata) and a lengthy list of references are included in Annex C. Only some of the more relevant references are listed in the references of this report.

Meeting and Discussions

BR is a holistic concept incorporating different levels of administration, political decision making, management authorities, research and local people. Annex D contains a list of informants, the main meetings and discussions that were held for the strategy compilation process.

Compilation Process

The group variably consisted of 2-3 local and international experts from the EUCAMP team who continued to work after the consultancy period in Tanga to ensure the executable ability of the strategy and action plan.

The core members of the EUCAMP team that participated in the compilation of the management strategy were Dr. Veli Pohjonen, Mr. T.C. Sawe, Ms. Irmeli Mustaniemi and Ms. Anna-Leena Simula.

4. WHAT IS A BIOSPHERE RESERVE?

This chapter gives the basic information about BRs and their activities. See Annex E for further details.

BRs are internationally recognised conservation and development areas within UNESCO's MAB Programme. BRs are nominated by national governments and approved by UNESCO. The World Network of BRs currently consists of 411 reserves.

A BR is intended to fulfil three basic functions, which are:

- (1) Conservation – the preservation of landscapes, ecosystems, species and genetic variation.
- (2) Development - the fostering of economic and human development which is socio-culturally and ecologically sustainable.
- (3) Logistics - the provision of support for research, monitoring, education and information exchange related to local, national and global issues of conservation and development.

The goals of the BR include the conservation of biological diversity, the maintenance of healthy ecosystems, the learning of natural systems and how they change, the learning of traditional forms of land-use, the sharing of knowledge on how to manage natural resources in a sustainable way and the co-operation in solving natural resources problems.

The structure of a BR is designed to carry out the complementary activities of nature conservation and the use of natural resources. BRs consist of a core area, a buffer zone and a transition area. Only the core area requires legal protection (Fig. 1).

BIOSPHERE RESERVE ZONATION



Fig.1. Zoning is a specific feature of a BR. Core areas are unpopulated and protected areas by designation as national parks. Transition areas are populated and unprotected. Buffer zones serve to buffer the core area against human influences from the transition areas (figure adopted from www.unesco.org/mab).

BRs adhere to the sovereign jurisdiction of the countries within which they are situated. Management needs to be open, evolving and adaptive, as well as involve all relevant management authorities and other stakeholders (see Fig. 2).

NATURE OF BIOSPHERE RESERVE MANAGEMENT



Fig.2. BR management is based on relevant legislation along with the involvement of management authorities and other stakeholders.

A major obstacle in reconciling the environment with development is the sectorized structure of our institutions. BRs provide places where conflicts of interest can be debated by all the stakeholders concerned, namely the local officials, local landowners, nature conservation associations, government leaders, scientists, local farmers, fishermen, and private enterprises.

They all must work together to find appropriate co-ordination mechanisms to plan and manage the BR. BRs therefore provide opportunities for conflict resolution which could be applied to other land and water development issues. These mechanisms are beneficial for all parties involved.

5. EUBR AND ITS OPERATIONAL SPECIFICITIES

This section contains a summary of the basic information and development options specified in the nomination form of the BR. This information creates the baseline for further BR development.

5.1 EUBR

The EUBR is situated in the East Usambara mountain area within eastern Tanzania. These mountains are part of the Eastern Arc mountain ridge which consists of several well known sections. EUBR is one of the three BRs in Tanzania (see Fig. 3).

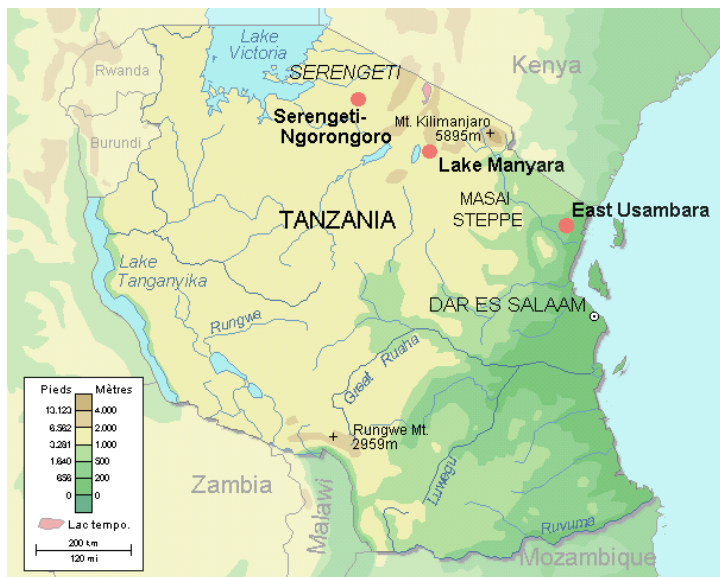


Fig.3. The BRs of Tanzania (UNESCO 2002, map adopted from www.unesco.org/mab).

The East Usambara area belongs to the Muheza and Korogwe districts within the Tanga Region (see Fig. 4).

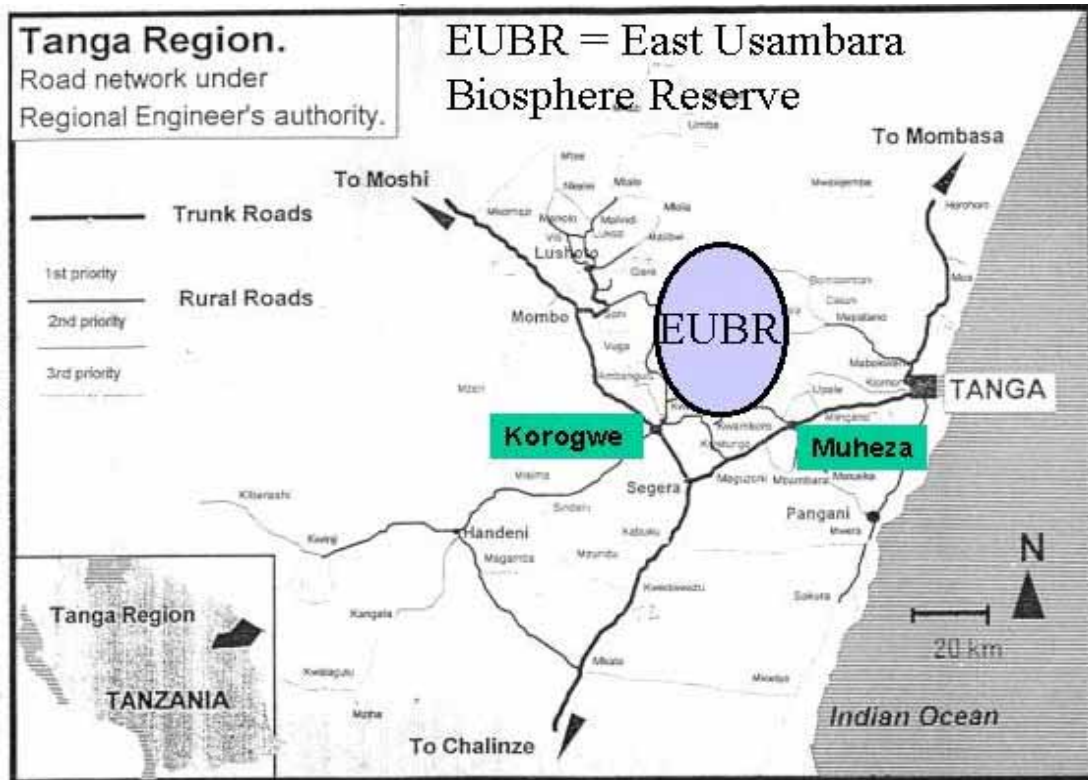


Fig.4. Tanga Region road map showing the location of EUBR in relation to the Korogwe and Muheza District Centres (Map: Tanga Regional Engineer's Office).

East Usambara mountain range is composed of ancient crystalline rocks predominated by gneiss, granulates and amphibolites. Soils are acidic and shallow with pH values between 4 and 6.5. Fertility is low.

The BR is situated between 300 to 1500 metres above sea level. Climate is tropical – equatorial with two rainy seasons. The short rains are from October to December and the long rains are from March to May. Precipitation, however, comes throughout the year. Mean annual precipitation is 2262 mm measured at 900 m (a.s.l.). The average temperature of the warmest month is 25 °C and that of the coldest is 16 °C.

The area is depicted by tropical, evergreen submontane rain forests covering the slopes of the mountains. Common tree species include *Cephalosphaera usambarensis*, *Allanblankia stuhlmanii*, *Albizia gummifera*, *Beilschmiedia kweo*, *Diospyros abyssinica*, *Englerodendron usambarensis*, *Schefflerodendron usambarensis*, *Drypetes gerrardii* and *Cyathea maniana*.

These forests are renowned for their great biodiversity, with regard to endemic species, perhaps even comparable to that of the Galapagos Islands in Ecuador. There are 13 globally endangered species of bird that are found in the area and 3.1% of the flora is endemic. East Usambara is also included in the IUCN invertebrate Red Data Book as a threatened community. The lower land of the BR is covered with savanna woodland.

5.2 Land Use History and BR Zoning

The main land use of the area started in the 1880s with the spread of population settlements. However, commercial logging in the present BR core areas ceased, for the most part, as early as the 1920s. Minor commercial logging continued until the 1980s. The logging ban was reinforced by the Tanzanian government in 1986 (ref. Rodgers, A. 2001). A note on the history of the logging ban in the Eastern Arc mountain catchment forests of Tanzania can be found in *The Arc Journal* 13 on page 1. The first forest reserves were established in the 1950s.

At present there are several forest reserves now forming the core zone of the BR. The most important one is Amani Nature Reserve established in 1997. Others include Nilo, Segoma, Bombo, Kwamngumi, Mtae, Kambai and Kwamarimba.

The total area of the BR is 83,600 ha of which 42,100 ha is forested land. The forested core zone consists of 30,000 ha forest reserves and a buffer zone that covers 12,100 ha of forest and encompasses the core areas. The rest of the BR is a transition zone consisting of 39,500 ha of agricultural land, 4500 ha of wooded grassland for pastoral settlements and 1100 ha of barren land, ponds and rivers.

The core areas have been protected by law and their greatest significance is in protecting the forest biodiversity. The forests, however, also form a very important watershed area that provides most of the water supply for the Tanga region.

Buffer zones protect the core zones. Sustainable use of forest products is allowed in buffer zones, such as local people collecting fuel wood.

The transition zone surrounding the reserves is in direct interaction with the reserves. Sustainable practices of agriculture and forestry can be promoted within the population to strengthen the status of the reserves.

UBR zoning is illustrated in Fig. 5.

EAST USAMBARA BIOSPHERE RESERVE

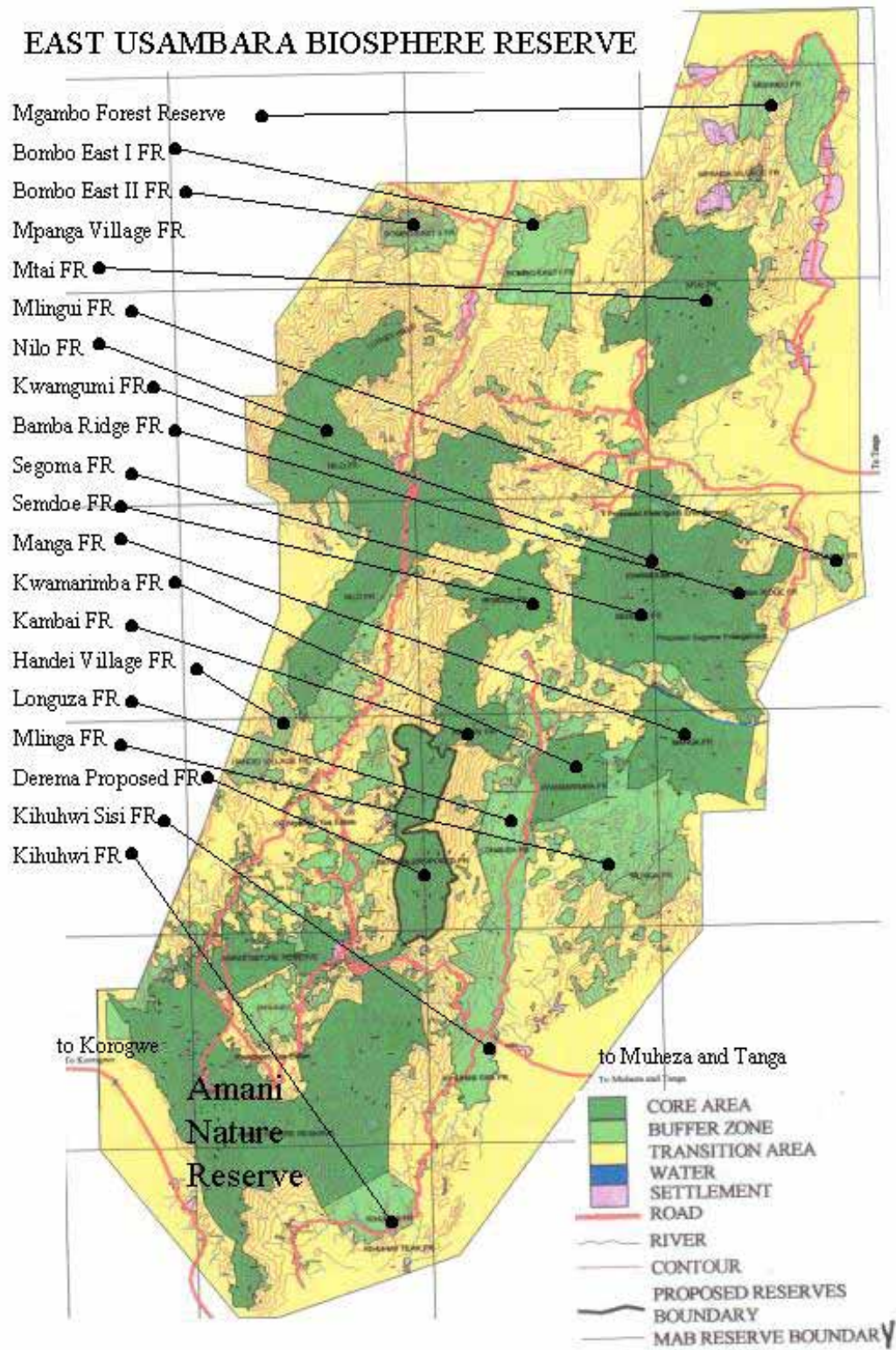


Fig.5. The EUBR zoning map (EUCAMP 2000).

5.3 Human Population and Socio-economy

The total number of inhabitants within the BR is about 155,000. No populations are allowed within the core zone, according to the BR regulations (Seville Strategy 1995). This holds true in East Usambara as well. The population has been estimated at 65,000 for the buffer zone and 90,000 for the transition area. There are about 70 villages in the area but no major cities are within the BR.

The population consists of four major ethnic groups: Wasambaa, Wabondei, Wazigua and Wadigo. The main economic activities are subsistence agriculture and livestock keeping.

The nomination form failed to supply any exact, specific information about the socio-economy of the BR area.

5.4 Human Impact on Nature

Basic economic activities such as agriculture and forestry are the main source of human impact on nature. Agriculture is ineffective and as the population pressure increases new forest areas are taken under cultivation. Moreover, the cultivation of cash crops, such as cardamom, require forested areas. These forested areas are thus gradually eradicated as cultivation continues. Fire is used for the preparation of the soil and for hunting. The fire, however, easily spreads into forests when the season is dry. Selective cutting of the most valuable trees, charcoal burning and local herb collecting may also deteriorate the forests.

Some of the means to decrease these impacts on forests include clearer delineation of the protected areas, cutting of fire corridors and intensified farm forestry. All agricultural practices should be improved in order to increase productivity which would result in decreased pressure to conquer new land. Alternatives to fuel wood and more effective uses of the wood would also be important to promote.

5.5 Development Function of the BR

According to the nomination form, promotion of ecotourism is considered to be the most important direction for development in the EUBR. Income generated by tourism would decrease the pressure on forests. In addition to the versatile forest nature, there are historic German buildings and an Amani Botanical Garden, established in 1902 with over 400 plant species, that may be of interest to the tourists.

In 2000, at the time of the BR nomination, the number of visitors was estimated to be 1000 per year. Since then it has been slowly increasing.

5.6 Legal Basis, Administration and Funding for the BR

The main legal instruments for management of the BR are forest laws and regulations and land acts.

Initial steps were taken during the preparation of the nomination form to develop a general management plan for the Amani Nature Reserve and three other national forest reserves. One village forest reserve has been established by law with the participation of local people, and is at present being supervised by EUCAMP. The management documentation is well prepared.

The Amani Nature Reserve Conservator works under the Ministry of Natural Resources and Tourism, Forest and Beekeeping Division. This Conservator is considered to be the main authority to in charge of the BR as a whole. The total number of staff members in the administration and research of the BR, both full-time and part-time, is about 60.

The Government of Finland and the European Union together provide 83% of the funding for the BR. The Tanzanian Government covers 7% of the funding.

5.7 Research and Research Institutes

There is a long history of biodiversity research in the area. Systematic baseline biodiversity studies are still going on in the core areas. There are also a number of separate ecological and socio-economic studies in the area.

The number of national researchers working in the area is between 20 and 30, and that of international researchers is between 5 and 10.

Climate and hydrology monitoring stations were established in 1992. There are also several permanent monitoring plots for various biotic assemblages.

Participatory rural appraisal has been conducted in some villages adjacent to the core areas.

The main research institutes working in the area are the Tanzania Forest Research Institute (TAFORI) based in Morogoro, Mlingano Soil and Agriculture Research Institute based in Tanga, Sokoine University of Agriculture based in Morogoro and the University of Dar es Salaam.

5.8 Planned Actions

A management plan and a designated administrative authority are planned for the BR.

There are a number of expected actions to be taken at the BR that concern all three BR functions. The goal is to strengthen the conservation function by working with local people. This is accomplished by promoting soil conservation actions, training people, establishing fire lines, intensifying farm forestry, introducing other income-generating activities and supplying or introducing alternatives for wood fuel. Promotion of ecotourism is considered to be one of the main ways to develop the area.

6. DEVELOPMENT HISTORY OF THE EUBR

The first record about establishing a BR in East Usambara was in the mid-term review of the East Usambara Catchment Forest Project in 1993 (Ministry for Foreign Affairs, Finnish International Development Agency (FINNIDA), 1993).

Establishment of the EUBR was one of the 13 results of the Catchment Forest Project successor, EUCAMP, which combined the East Usambara Catchment Forest Project (EUCFP) and East Usambara Conservation and the Agriculture Development Project (EUCADEP) into one programme (see Fig. 6).

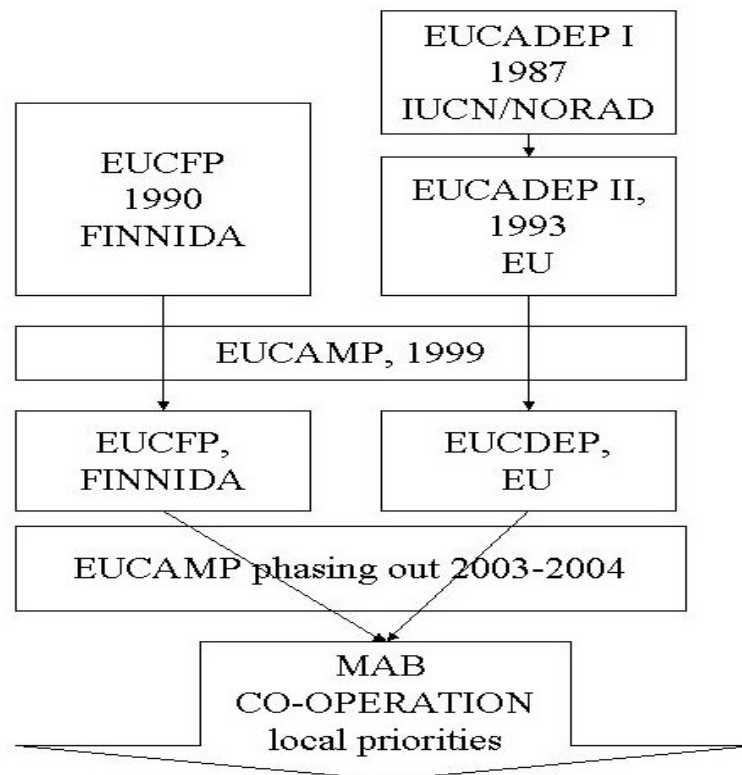


Fig.6. The development of EUCAMP with an indication of the donors: FINNIDA, NORAD or EU (Information obtained from Dr. Veli Pohjonen, EUCAMP Chief Technical Adviser).

The BR concept was revived in 1998 and the application was prepared in a process directed by the Amani Nature Reserve Conservator, Mr. T.C. Sawe. Soon thereafter the application was accepted by the Korogwe and Muheza Districts within the Tanga Region and other regional administrations and necessary national institutions. The application was then sent to UNESCO. After minor additions to the nomination

documents UNESCO's International Co-ordinating Council (ICC) suggested the area be accepted into the BR network.

The nomination in November 2000 confirmed the extraordinary biological value of the area as a unique biodiversity hotspot with high numbers of endemic and endangered species. The importance of the catchment area was also valued in the nomination process. Acceptance of the application was announced in a press conference soon thereafter.

The work to establish the BR structures remains incomplete on both the local and regional levels. The EUCAMP 2001 mid-term review criticised the project about forgetting the local participation and involvement. The practical work in the field, however, gives a different impression. The EUCFP, the EUCADEP and the Tanzanian Government programmes have all unknowingly already been active in the spirit of MAB since the mid 1990s.

Previously, conservation of East Usambara area was carried out through forest reserves. In these early conservation efforts villagers had very little to contribute to the centrally governed reserves. Moreover, they did not benefit from them. Rural development programmes in adjacent villages were rather separate. This separation, however, is an important way to compensate for negligible or limited forest reserve access to the local population.

In November 2001 the Tanzanian Government endorsed the National Forest Programme and Community Based Forest Management Programme simultaneously with the nomination of the BR. Community Based Forest Management was identified as the main strategy to ensure effective management of forests. It also provides links between forest resources utilisation, poverty reduction and sustainable livelihoods for local communities. Community Based Forest Management refers to any forest management regime in which local people play a major role.

Also in MAB-thinking the core areas, buffer zones and the transition zone form a continuum in which the villagers have a key role. The current EUCAMP Work Plan of 2001/2002 is based on this concept. The Work Plan was also linked to the government programmes.

Since the mid 1990s EUCAMP has promoted Community Based Forest Management in its target area. Mtai Forest Reserve and Manga Forest Reserve are two National Forest Reserves that were selected as Joint Forest Management pilot areas. Experiences from Mtai and Manga will later be used for other East Usambara National Forest Reserves. Another important forest reserve in the Joint Forest Management process is the Derema ecological corridor. The villages near Derema have suggested the establishment of a local National Forest Reserve.

EUCAMP also encouraged and facilitated East Usambaran villagers to initiate their own Village Forest Reserve schemes. The planning of the pilot Village Forest Reserve in Mpanga started in 1994. As was announced in the official newspaper of the government, Mpanga is the first formally and officially gazetted Village Forest Reserve in Tanzania. Handei Village Forest Reserve has been under the process of

establishment since 1995, Kizee Village Forest Reserve since 1999, Kizingata Village Forest Reserve since 2001 and Mfundia Village Forest Reserve since 2001.

The management plan for Mpanga is currently ready. The borders have been surveyed and the maps for Mpanga and Handei have been drawn. The biodiversity survey has been carried out and documented for Mpanga. Border demarcation is being done for Kizee, Kizingata and Mfundia.

The five Village Forest Reserves in East Usambara fall broadly into two categories: (1) Those proposed mainly on ritual or sacred forest background. (2) Those proposed on the basis of economy. Sacred forests are as small as 24 ha in Mpanga. Mfundia is a 500 ha forest, which is typical for forestry. Important commercial timber species such as karambati, *Brachylaena hutchinsii* are abundant. The management options of these categories differ. The ritual Village Forests are instinctively conserved with strictly limited, if any, timber exploitation. The commercial Village Forests are subject to sustained timber exploitation to satisfy the needs of the villagers.

7. SUMMARY OF THE BACKGROUND DISCUSSIONS AND PROPOSED MAIN LINES FOR THE DEVELOPMENT FUNCTION OF THE BR

An analysis was done to clarify the existing options of arranging future actions. The basic approach was that the BR is a regional and national unit with local emphasis on actions. A sound administrative background is important to ensure support for and visibility of the BR. From the activities view point, the international donors and co-operation organisations offer an important opportunity.

7.1 Goals for the BR from Local, Regional and National Points of View

A number of targeted interviews and discussions were done for the strategy process. Many were asked about their feelings regarding the needs, possibilities and will for BR co-operation. Those that were asked included the IBC Msasa and Gereza villages, the Korogwe and Muheza districts, the Tanga region, national level decision makers such as Members of Parliament from Muheza and Korogwe, the Ministry of Natural Resources, Division of Forestry and Beekeeping and finally the East Usambara Tea Company for representation of a local, important enterprise. The EU ecotourism strategy consultant was also asked. Lake Manyara BR was visited in order to clarify the existing co-operation between BRs. For further information about the interviews see Annex C.

The basic messages from the village, district and region levels were all the same and were as follows: In general the EUBR nomination and MAB approach were highly valued, but insight into the programme and its possibilities was weak. The expectations, however, about the obtainable results were unanimously positive, as was the will to participate in the activities.

In the discussions, BR co-operation was highly valued in order to direct the activities that fulfil the basic needs of the villagers.

This approach is in full concordance with the conservation aspect because the threats to conservation come, in particular, through human activities such as illegal forestry, careless use of fire near the reserves and conquering new areas for agriculture. If the basic needs of the villagers are fulfilled by alternative means, they would not be forced to exploit forest resources. Moreover, if the positive, beneficial actions on the village level are connected with conservation, the villagers would strengthen the conservation with their own deeds. If they feel as though they have lost their rights and benefits, they will not care about protection.

The national point of view was not as 'down-to-earth' as the local one. The impression about the discussions was that the BRs were considered important, but mostly for the biodiversity view point. The development function of the BRs was not clearly indicated in the discussions.

7.2 Management and Co-ordination Options including Existing Organisations

Management of the BR area will be done by appropriate management authorities, the village committee for the village areas, relevant forest reserve organisations for the forest reserves and private owners for their land. These actions do not need new organisations.

A functioning BR, however, needs a co-ordinating committee that includes local, regional and national stakeholders from village activists, administration, research and enterprises. The committee will serve as a common platform for development of the whole area, will define the priorities of the BR and will be very effective in spreading information about BR activities. All of the interviewed parties were interested in participating in the work of the BR co-ordination committee.

Making up a totally new body for a BR co-ordinating committee is not feasible as there already are many existing administrative and project organisations that deal with similar goals. From the point of view of the financier of this work, development and use of the Steering Committee of EUCAMP for BR purposes would ensure smooth continuation of the project activities. There is also extensive background data collected in EUCAMP for forest reserve management, which is one of the core activities of the BR.

7.3 Contacts, Networks

Co-operation with the other Tanzanian BRs is desirable and beneficial. Discussions at Lake Manyara BR revealed that the connections are currently very weak. During only a few hours of discussion it became clear that similar interests exist and that connections between BRs would multiply the benefits of the ideas and information obtained by some of the parties. Also, promotion of ecotourism will need constant contacts.

The present contacts of the Tanzanian BRs with African BRs and other BRs are scarce.

At the individual BR level there are also options for effective co-operation. For instance, the Agricultural Research Institute (ARI) at Mlingano has a good Geographical Information System (GIS) laboratory and can provide the services and co-operation that are currently sought from Dar es Salaam. ARI Mlingano also has some national soils programs that can be taken care of by similar means.

These possibilities can be exploited immediately, but the full benefit can only be obtained after getting the comprehensive management and development plan for the BR. At that stage a complete survey of the actors in the area must be done.

7.4 Proposed Development Options

The development of the BR needs to be directed from the local point of view in order to integrate it to the village, ward, and district planning and implementation levels. According to the village level discussions, a Round Table discussion is needed to achieve the results most beneficial for the villages, the BR and the region in general. Effective development measures can be promoted by combining the existing forces of partners such as villages, local and regional administration and businesses with the Amani Nature Reserve.

7.4.1 Co-operation with EUTCO

Although there were some issues that might later come up, needing further clarification and discussion, co-operation with the area's greatest employer, the East Usambara Tea Company (EUTCO), seemed very promising. EUTCO is a private company that is situated in the middle of the BR, practically surrounded by the Amani Nature Reserve. Also the Derema Ecological Corridor is next to lands owned by EUTCO.

Possible co-operation targets were versatile, extending from schools to tourism, medical services, organic farming practices and private cash crops. Also the possibility to connect the EUTCO product, "Amani tea," with the EUBR was discussed. This option could be very beneficial for both parties by adding a notion of the East Usambara nature values to the tea produced in the area. EUTCO, in turn, could donate a provision of the price to the Amani Fund for conservation and development purposes. This procedure would increase local to international awareness about the East Usambara area. The requirements of sustainable development concerning EUTCO production should be discussed and agreed in the EUBR Co-Ordination Committee.

Whatever the decisions concerning co-operation with EUTCO, it needs to be borne in mind that EUTCO will be a major employer in the area. EUTCO and their dependants have more than 20,000 employees combined. The company will be in the middle of the BR whether or not there is co-operation. EUTCO also owns some of the Amani Nature Reserve land. Only a profitable company can make good environment actions. Should the company go bankrupt, a major economic disaster for the area's economy would ensue and it would also cause greater pressure on the forests.

7.4.2 Usambara Water

The second main line in development could be water, "Usambara water". Thanks to EUCFP, it is a well known fact in the area that the mountain ridge supplies water to the Tanga region. Water will be one of the mega-trends in the world within 10 to 15 years. It is already a very restricting factor in several parts of the world.

Usambara water could be a major product both in the area and further away. If the water and the reserve are combined in the marketing packages, the BR would be promoted effectively. Usambara water and the BR could make the same kind of alliance as the tea and the reserve. The forests and conservation, in general, are crucial for a sustained water supply. This is well known in the area. Combining the image of unique nature with Usambara water would be beneficial for both parties. The responsibilities of the partners should be discussed and agreed upon in the EUBR Co-Ordination Committee.

7.4.3 Nature Tourism

Tourism is considered a great opportunity in the area. Examples of lucrative tourism can be seen in other Tanzanian BRs including the Serengeti, Ngorongoro and Lake Manyara. These places are even becoming overcrowded.

In March 2002 an EU funded ecotourism expert made an Indicative Marketing and Promotion Plan for the Northeast Mountains and the North Coast Zone. This report depicts the possibilities to alleviate the tourist pressure of the Northern Circuit by extending nature tourism to the eastern and coastal areas.

In spite of all the development possibilities of the area, there are lots of questions yet to be answered about basic services before the tourism industry in East Usambara is effectively nature friendly or profitably promoted. The services that are crucial for the development of tourism, however, also benefit local people. These services include tarmac roads, clean water, energy, health services, and accommodation facilities. Thus, if conducted co-operatively with villagers while respecting their values, tourism development actions would benefit the villages by providing alternative sources of income and by improving the general conditions in the villages.

7.4.4 Village Development Measures

Village development actions must be decided according to the target village. The needs and possibilities to promote the actions vary greatly from village to village. Many of these actions are in clear and direct connection with the promotion of nature based tourism.

8. VISION 2010

This vision is a brief illustration about what EUBR could and should be in the year 2010 after successful adoption of the strategy. It thus gives an outline of what should be achieved and some means of how it can be done. The vision is also food for thought in creating ideas.

Vision

The EUBR is a full and recognised member of the Tanzanian family of BRs and of internationally recognised nature objects. The basic funding of the BR co-ordination is guaranteed and comes mainly from national sources.

Interest towards the area increased remarkably after a series of prominent articles were published in major scientific journals and magazines. It is very well known, both abroad and domestically, that the East Usambara area belongs to UNESCO's MAB program. In addition, the value of the nature is prominent in an international context.

EUBR is well marked with signs throughout the area and information about actions spreads through local contacts, networks and partner organisations.

The BR is managed by a full time co-ordinator who is helped by a capable staff that takes care of research, development and information dissemination issues. Co-ordination of the BR activities involves relevant parties from the village level to international organisations working in the area, including major research institutions. This ensures smooth, reliable and effective information flow, guarantees the right partners to the projects and maximises the use of available sources of financing.

The Steering Committee of the BR is also known as "the development dynamo" of the area. It combines the existing national and international programs with regional efforts and local needs and ideas. The research is always conducted under the projects and the dissemination of the gathered information is the essential component that binds all partners together with the local population.

EUBR has an international reputation of being a pilot and testing site of development programs and nature conservation strategies concerning tropical environments. It has also been nominated a national pilot site for various rural development strategies and policies. Remarkable results have been achieved through projects concerning the sustainable use of forest resources and intensification of village agriculture.

The information gathered in various programmes and projects is effectively used for education, research and training in environmental and development issues. The clientele of these actions are both domestic and international. The international interest towards the East Usambara biodiversity hot spot has enabled several nature tourism enterprises to start in the region. These enterprises utilise the areas extraordinary values and use local people as guides, food suppliers and in other service tasks. Tourism has also triggered other small scale businesses to emerge. The economic indicators of the area are clearly positive and the BR is one of the main reasons.

9. EVALUATION OF EAST USAMBARA BIOSPHERE RESERVE PRESENT STATUS AND SUGGESTIONS FOR DEVELOPMENT

This chapter gives answers to the questions addressed in TOR (see Annex A for the whole TOR). The strategy and action plan are given in Part 2 of this report in the simple form of a Logical Framework.

“The purpose of this consultancy is to establish a comprehensive management strategy for the East Usambara Biosphere Reserve, in which the high conservation values of the unique rainforests can be combined into community based management of this natural resource.”

9.1 The Status and Level of Progress in Management of East Usambara Biosphere Reserve

9.1.1 Status of the Biosphere Reserve

A BR is an area established by national decisions. Only after fulfilling a set of criteria is it approved by UNESCO to the world network of BRs. BRs remain under the sovereign jurisdiction of the countries in which they are situated (Seville strategy 1995).

The EUBR has been approved to the world network and from the UNESCO point of view it is a full member of the BR family. The nomination included requests for clarification of the zoning and land acquisition.

The national status of the BR and its activities depend on the national policies and objectives set on the BRs.

There is no clear, defined BR policy in Tanzania. The main objective of the BRs seems to be to strengthen nature protection. No priorities have been set nor have national guidelines been defined on how to use the BRs as regional model areas for development - for instance, by making more effective use of the various sectoral policies being implemented in the country.

Due to the lack of a clear BR policy there is no straight financing for the EUBR. BR activities are being financed indirectly from other projects such as EUCAMP and the Amani Nature Reserve, whose conservator acts as the BR co-ordinator.

9.1.2 Management of the Biosphere Reserve

The main features influencing management of a BR are: (1) Appropriate zoning of core areas, buffer zones, and transition areas; (2) A co-operational body such as a steering committee that will make it possible to co-ordinate the actions of different actors and to create mutual understanding about development; and (3) A pact of management guidelines concerning the BR as a whole, not only the core areas and buffer zones. These issues will be examined here.

9.1.2.1 What is “Biosphere Reserve Management”?

A BR consists of areas under different management authorities that manage the core area, buffer zone, and transition area. There are also different types of reserves as core areas. At East Usambara the protected areas are the Amani Nature Reserve, several National Forest Reserves and the Village Forest Reserves (see Fig. 5). All of these zones and areas have different management mechanisms that need co-ordination and co-operation between responsible authorities. In this way maximum benefits of the BR status will be gained and, similarly, conservation values of the reserves will be ensured.

Management and co-ordination also need to be tightly linked to other actors such as researchers, administrators and the world network of BRs. The establishment of a co-ordinating committee is the only feasible way to do this on site.

BR nomination is the starting point of the BR work. BR type of work might have been conducted in the area before nomination, but the nomination is needed to start a full scale of **biosphere reserve activities**. These activities need a specified target area, a collaboration coalition and necessary administrative and operational structures. This is true especially if the BR boundaries do not follow the boundaries of existing administrative units in which case previous collaboration has not been obvious.

The EUBR partly consists of the Muheza and Korogwe districts and of about 70 villages around the East Usambara Mountains. The boundaries of the BR do not follow the boundaries of the districts nor of the villages. BR boundaries have been delineated roughly and mechanistically around different types of forest reserves. The co-operational structures over the area have not been obvious, except for the activities performed by EUCAMP. Catchment based forestry has implications that play a major role in East Usambara area forest activities and area development in general. This is because the East Usambara area is the major water source for the region.

The EUBR is an example of a modern reserve. There is extensive background work done on inventory and management of natural resources. With strong participation by the leading actors, however, the emphasis of the reserve is clearly towards more societal evolution and not towards mere nature protection. This makes a clear distinction between the EUBR and the first stages of BRs from the 1970's. These earlier BRs had a tendency to be mainly directed towards nature protection, environmental research and monitoring.

Several separate BR type of activities are being conducted in the area by EUCAMP. The actions are directed towards improving the various village level practices in forestry and agriculture in order to decrease the pressure of forest exploitation.

These actions have also been linked to important national programmes such as the Forestry Programme and the Poverty Reduction Programme. In addition, the actions have been linked to the testing of the new Land Law and the Village Land Act. None of these activities have been distinctly linked with the BR. This means that the publicity and benefits of the area belonging to UNESCO world network cannot be

obtained. Moreover, there will be no common understanding about what the BR is, what it is for and what it is doing at present.

9.1.2.2 Zoning and Corresponding Activities

This chapter only gives an overview about the EUBR zoning. Chapter 9.2 examines these questions in more detail.

The **core zones** of the BR are the forest reserves protected by law and are under separate management plans and authorities. In general, the work concerning the establishment and marking of the reserves is proceeding well. Plenty of work has been done for the core areas and more is underway. Project funding by EUCAMP has guaranteed the progress.

Buffer zones of the BR are meant to protect the nature values of the core areas. Buffer zones of the EUBR have been defined mainly according to the forest reserve status from the conservation point of view. Less important and more exploited forest reserves are buffer zones.

The transition area consists of areas belonging to the Muheza and Korogwe Districts. Since the EUBR was just nominated in November of 2000, the work to link all of the actors in the area to the BR activities is only in the very beginning stages. The co-ordinating committee is essential in operationally connecting the areas and the outside actors.

9.1.2.3 Administration of the Biosphere Reserve and Co-ordination Committee

With its supervisory board and with the help of the Amani Fund, the Amani Nature Reserve has assumed, *de facto*, some of the tasks of a BR co-ordinating council. The BR, however, needs a clearly designated BR co-ordinating committee that would serve as the driving force of the reserve actions. It needs to be borne in mind that the BR combines the interests of different stakeholders.

A comprehensive administrative background, with proponents on all levels of administration, is needed to ensure the effectiveness, visibility and sustainability of the BR activities. The EUBR will be promoted as a regional BR with national and international values and tasks. Included in these values and tasks is diversity conservation, watershed protection and rural development. Relevant actors from all necessary quarters, such as administration, research, local people and enterprises, will be invited into the co-ordination committee

Lack of the co-ordinating body is the most obvious hindrance to future progress. It is also essential to have a permanent, full-time co-ordinator taking care of the many activities in the BR.

9.1.2.4 Management Document

A general pact that concerns the directions and priorities of the BR activities and also includes the commitment of the participants should be compiled in the co-ordinating

council. This document would include logical and consistent goals facilitating the practical, day to day work and development of new projects.

9.1.3 Proposed Actions

Status of the BR

9.1.3.1 The Status of the BRs in Tanzania Should be Clarified and a Clear Role in the Development Sector Should be Given to Them

The national BR policy should take advantage of the following; (1) The role of the BRs as regional development model areas; and (2) The national sector policies which could be effectively tested and implemented first in these areas. This approach would not require more funding on the national level but it would give a new position and new visibility to the BRs. Emphasize and direction of the work done to the most important issues would also be provided. This applies to all of the Tanzanian BRs.

9.1.3.2 Administration of the Tanzanian BRs should be Clarified, and the BR Co-ordination Needs to be Linked Straight to the Regional Decision Making

According to the EUBR nomination form the main administrative unit is the Ministry of Natural resources and Tourism, Division of Forests and Beekeeping

- A BR is a regional, co-operative unit that combines the views of different interest groups from Tanga, this being the regional level. This function will be guaranteed by making the straight co-operation between the person in charge of the BR and the regional administration as easy as possible. One option to do this is to have the position of the BR co-ordinator located in the Tanga Region office.
- This approach would also mean establishing a post for a full-time BR co-ordinator.

The same process is applicable to all Tanzanian BRs. By these means, the BRs will be opened towards the society.

Management, Co-ordination and Partnership of the BR

9.1.3.3 A Co-ordinating Committee for the Biosphere Reserve Should be Established as soon as Possible

The co-ordination of a BR requires a full time co-ordinator with reasonable resources, an office in a central position and contacts in the regional context (see also the previous chapter). A valid set of partner organisations is needed. The links of the BR activities to national and sectoral policies and programs, such as the Poverty Reduction Strategy and the National Forest Programme, should also be guaranteed by these mechanisms (see Fig. 7).

EUCAMP has mediated the process of getting the BR to the area. Conservation, development efforts, and land-use planning are some present main EUCAMP actions that are clearly MAB-type of actions.

- The co-ordinator of the BR would most easily come from the present local EUCAMP staff.
- The most reasonable alternative to establish the co-ordination committee is to develop it from the steering committee of EUCAMP in order to guarantee the continuity of work.
- A two-step model consisting of a supervisory committee and a co-ordination committee is proposed to get all the strategic partners involved. The co-ordination committee can be split into working groups as needed. The working groups can then invite external experts and stakeholders as needed.

Tasks and Composition of the Biosphere Reserve Committees and Working Groups

Supervisory Committee

Task: BR funding and other national arrangements
Period: 4 years
Chairman: a prominent national person
Secretary: BR co-ordinator
Members: prominent representatives of administration and national organisations, national MAB-committee, steering committee chairman, international organisations
Meetings: formal, 2 times per year with national publicity of the meetings
Language: English

Co-ordination Committee

Task: steering of the BR activities, starting of projects, preparation of proposals to Supervisory committee; nomination of the working groups, proposals to Amani Nature Fund about BR projects to be funded, compilation and periodic revision of the BR Co-ordination Document
Period: 2 years
Chairman: regional, widely accepted person
Secretary: BR co-ordinator
Members: local and regional actors, research institutes, enterprises (sustainable development), other BRs, national MAB-committee
Meetings: formal, 4 times per year with regional and national publicity of the meetings
Language: Swahili

Working groups (as many as needed)

Task: topic oriented; co-operation with steering committee

Period: may vary according to needs
 Chairman: from the group
 Secretary: from the group
 Members: relevant partners, BR co-ordinator if needed, invited stakeholders and experts
 Meetings: formal/informal as often as needed; press conferences on relevant level as often as needed
 Language: as needed

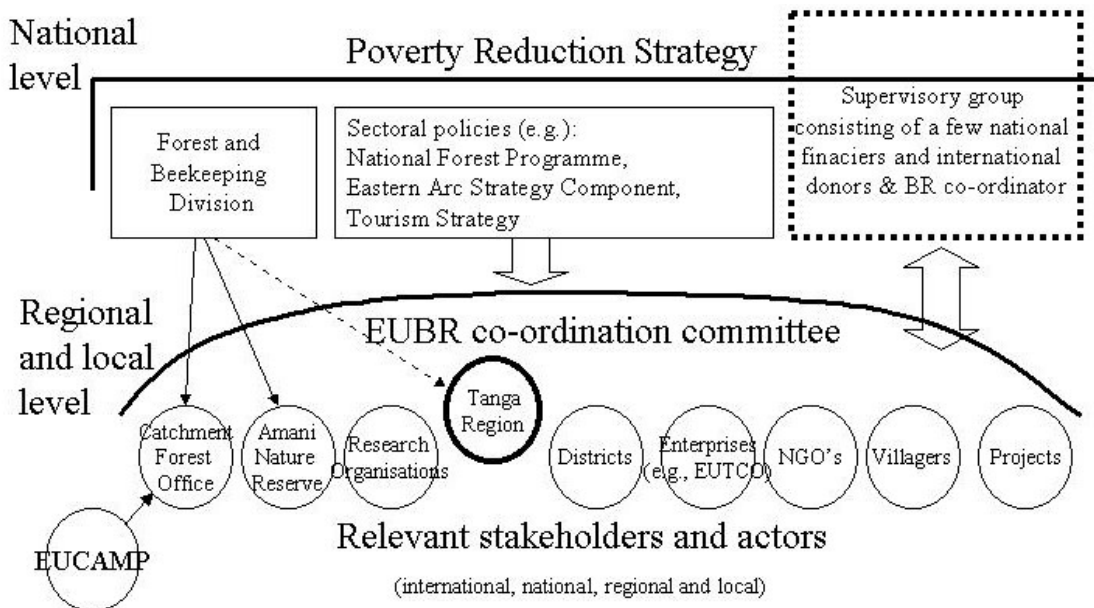


Fig.7. Schematic chart of the EUBR organisation: BR activities are linked directly to National and regional policies. The Administrative responsibility of the BR lies in the FBD, which allocates one person (BR co-ordinator) to the Tanga Region office to guarantee all the necessary links in the area. The BR co-ordination committee involves all relevant stakeholders and actors for making the overall BR "Management plan" and for planning yearly actions. The national supervisory group consists of national financiers and international donors that make strategic financing decisions.

9.1.3.4 Biosphere Reserve Management Guidelines Should be Prepared

The EUBR consists of different types of reserves and about 70 villages in two districts. The area includes extensive areas of private land, such as EUTCO plantations. All of these areas have different management authorities and priorities.

- A pact is needed about the direction of the main actions in the BR that includes the whole area. The interactions between local people and nature protection are to be especially emphasised. A management document is also required from UNESCO.

The benefits of this kind of public agreement are obvious. The process needs to involve all relevant stakeholders. It makes the BR known. It sets the priorities and directions for the future into open, discussable processes. It helps direct money to the most important targets and helps find relevant partners for the projects.

The main executors of the process that makes up the management document are the co-ordinating committee and its working groups. The process is prone to take several years.

9.1.3.5 Permanent Financing of a Full-time Biosphere Reserve Co-ordinator Should be Guaranteed from National Sources

The BR is a process, not a project. Continuity and stability are essential to make reliable and credible BR development work. Therefore, a BR cannot be based on temporary projects and funding.

Basic financing from national sources and integration with national institutions are the keys to make a credible BR work.

- At the first stage the work could be financed by the phasing out stage of EUCAMP. This will maintain the sound development parts of the work and allow for the seeking of solutions for permanent funding of the co-ordinator and the steering committee from national funds.

BR development work can be flexibly done in projects provided there is a permanent body to maintain the integrity and co-ordination between the set of various projects.

- Projects and their financing will be discussed by the supervisory group and co-ordinating committee of the EUBR.

9.2 The Present Set Up and Validity of the Biosphere Reserve Zoning (Core Areas, Buffer Zones, Transition Areas and Settlements)

9.2.1 Delineation

The EUBR has been delineated mainly in the core areas; the forest reserves (see Fig. 5). The outer boundaries of the transition zone can be mechanistically set because by definition a BR is not an administrative unit ruled by one body but is based on commitment and co-operation.

The activities of a BR can best be conducted if the delineation is in accordance to relevant administrative or geographical/ecological boundaries. Both of these approaches have their advantages and disadvantages, and seldom do these boundaries coincide.

The East Usambara catchment area would be the most important geographical basis for the delineation of the BR. Administrative boundaries of districts or of villages within the districts would be another feasible option for the delineation of the BR. The

administrational boundaries are more useful from a development point of view and the catchment area is better from an ecological point of view. Neither one of these has been used at East Usambara.

9.2.2 Zoning

The zoning of a BR needs to strengthen the conservation, development and logistics functions of the BR. According to the documents and discussions, all these functions are important in the EUBR. "Man" as the development function is less pronounced than "Nature" in the delineation.

9.2.2.1 Core Areas

The core areas at East Usambara are very valuable from the conservation point of view because the area is part of Eastern Arc Biodiversity Hot Spot. It also belongs to the Conservation Strategy of the Eastern Arc Mountain Ridge. The conservation function is well manifested in the zoning (see Fig. 5). The crucial biodiversity values of the EUBR are included in the core areas. These are well delineated, studied and documented. The work of EUCAMP and its predecessors has concentrated on the core areas. Consequently, these are now all under legal protection.

Establishing the Derema ecological corridor between the Kambai Forest Reserve and the Amani Nature Reserve is a major effort in maintaining the biological integrity of the forests (see Fig. 5, proposed Derema Forest Reserve). The Derema area is about 1500 ha and is roughly worth US\$ 1 million in compensations for the villagers that now use the forest for economic purposes. There will be lots of work and trouble in handling the situation with the villagers, particularly with those that will lose all or partial means of living when the use of the forest changes. There also lay extensive possibilities to improve the economy of the area with the considerable boost that will be gained by injection of the compensation money to the local economy. The Derema question is a large scale BR issue. BR co-operation and a comprehensive approach by the co-ordination committee would greatly benefit the solving of the ecological, economic and social questions.

9.2.2.2 Buffer Zones

Buffer zones support the conservation status of the core areas. The pressure to use forest resources, such as the collecting of fuel wood and other forest products, has been directed to buffer zones. Buffer zones are also valuable in shielding the core areas from incidental forest fires inflicted by villagers. Research and monitoring can be effectively performed in the core areas and in buffer zones.

There is no consistent data available about the pressures caused by villages on the reserves in different areas, nor is there exact data about the populations or settlements. From the map in figure 5 and with a few visits to the area it is difficult to evaluate whether the buffer zones will protect the core areas. If the pressure of forest exploitation is directed from core areas to buffer zones, the zoning is acceptable. According to the maps, the buffer zones are sporadically distributed and serve for this purpose only partly.

The most important of the core areas is the Amani Nature Reserve. It has started linking the buffer zones and the transition area with the reserve. Development plans have been created for the villages near the nature reserve. These plans are well done but according to the conversations in the villages implementation has not been very fruitful. This underlines the importance of systematic work with villagers. Making the plans is only the beginning. Help in implementation, funding, right contacts and evaluation are also needed. This work builds up the capacity to make the next effort more effective.

It would be essential to gather exact information about the population and estimate the pressures on forest reserves. The questions about the need to create buffer zones around the core areas and the need to redefine the zoning can be answered only after a comprehensive study.

9.2.2.3 Transition Area

Development function is mainly attributed to the *zone of co-operation*, otherwise known as the *transition area*. This function has also been considered while designing the buffer zones so as not to ruin the economic basis of the surrounding villages.

The transition area includes the land and villages between the forest reserves and extends variably to the surrounding countryside. However, the outer boundary of the transition area is arbitrarily defined and does not *per se* support development, logistics or conservation. Getting relevant socio-economic information about the BR from existing statistics is impossible at present because the delineation does not follow any statistical units. Thus planning of operations and any follow up to actions taken is difficult and expensive.

Having buffer zones everywhere around the core areas is not obligatory provided the nature values can be guaranteed by other mechanisms. Since the buffer zones might be less useful in shielding most of the core areas of the EUBR, work with the villagers in the transition area is highly important. This fact emphasizes the flexibility of the BR concept but gives a great challenge to co-ordination of the reserve and to co-operation between the partners.

Local development, via the improvement of local livelihood, is not only a prerequisite but a guarantee for success of the conservation aspects as well as the whole MAB concept. Methodology and the combination of available resources lead to results with minimum input.

The development programme of the BR can be started by continuing the ongoing, successful EUCAMP projects in rural development. Work will be started in the area to find good examples of local development, including how the development problems have been solved, examples about enhancing gender equality, co-operation with outside actors, and links to and utilisation of major state programmes. A comprehensive, widely accepted development programme will be formulated in the co-ordination committee of the BR. Strategic partners and funding for the development programme will also be sought by the committee.

9.2.3 Proposed Actions

Like conservation, development needs good background information and well defined areas to be successful. Development is defined as the well-being and livelihood of the local people. The socio-economic factors should be taken into account more clearly in the delineation of the BR. From the point of view of the BR, the villages are the key operational units. They also influence the protection status of the reserves.

9.2.3.1 A Revision Should be Done to Ensure that the Outer Boundaries of the BR Follow the Administrational Boundaries of the Villages

This revision would enable getting exact socio-economic information from the BR. Consequently, the influences of any BR actions on economy would be traceable.

Because a BR is a model area, it should give information transferable to outside areas. Monitoring and research would also greatly benefit from unambiguous socio-economic information.

9.2.3.2 Mfundia Forest Area with Adjacent Villages Should be Included in the Biosphere Reserve

The suggestion of revision of the BR boundaries has been done in the spirit of developing the societal, development function of the BR. For the same reason, extending the BR northwest to include the Mfundia forest area and adjacent villages would be advisable because there is a successful example of community forestry development. This is clearly one of the key issues to general BR development.

9.2.3.3 A Background Study Should be Done About the Population and Other Pressures Inflicted on the Forest Reserves in Order to be Able to Make Possible Revisions in Defining the Buffer Zones

The population study would be a good baseline and background for all of the BR studies and development efforts to come. The study should start as soon as possible but it can end only after decisions about delineation of the transition area are made. Meaning, only after knowing which villages are included in the reserve.

Buffer zones need to ensure favourable conservation conditions within the reserves.

Forestry and agricultural practises have to be intensified in the buffer and transition zone to minimise the pressure on the core areas.

Efficient management of the areas requires fast actions that proceed with the land reform to ensure the stewardship of the soil and biotic assemblages.

9.3 Establishment of Permanent Linkage Between the MAB Concept and Community Based Natural Resource Management, Poverty Reduction Strategy and Other Sectoral Policies

9.3.1 Relevant Programmes

The Poverty Reduction Strategy, Community Based Natural Resource Management, Local Government Reform and Land Use Planning together with the National Forest programme are the main policies in Tanzania concerning rural livelihood. The MAB concept is a comprehensive one. It inevitably includes these approaches, especially because the development function of the BR is also considered important in ensuring the conservation status of the core areas (cf. Chapters 4, 91 and 92). A national BR policy and goals for the reserves would enable the directing of relevant national and international programme actions to the area for piloting.

There cannot be a single, simple approach to link all these programmes to the BR activities. All, even separate actions towards the goals of these programmes are also BR work.

From the BR point of view the linking of all these programs to local reality cannot be done effectively without a co-ordinating committee. The relevant actors concerning each programme should be around the same table with local people and researchers developing concrete projects for promoting the programmes. It would be essential to take into account the main ideas of the other programmes while implementing one of them. This is easily done because the goals are the same or overlapping. Poverty reduction, in most cases, is the greatest common denominator.

Consistent priorities, short and long-term goals and concrete projects would facilitate relevant co-operation between corresponding programmes in Tanzania as well as in other countries. Co-operation is impossible without concrete projects and responsible persons that take care of them. The BR sets the priorities and goals for the activities in the co-ordination committee. At first, the responsible persons to start the operations will normally be found among the partners. When a project with proper funding is set up, there will be external experts or other hired personnel doing the job.

9.4 Establishment of Links to National and International Networks and Other Co-operative Bodies, Especially in MAB Issues

9.4.1 Networks

A BR is an international unit by nature. The East Usambara area has been a target of international interest for over 100 years. This history gives good grounds for getting information, co-operation partners, donors and researchers to the area. The results obtained from the area are also valuable property to be spread elsewhere through co-operation.

Networking grows from need and requires concrete actions and serious commitment. It cannot be promoted only in speeches or by participation in meetings. It is clearly not possible to establish working relationships with others without concrete needs and projects that are answered by local and regional means. Co-operative partners and responsible persons from the site level must also be specified. The co-operative partners can easily be invited into a situation where there is something to give. For instance, good structure and background information for making studies or clear and effective cases for development can be provided.

The first step to proceed with the networking is to have the priorities set for the BR. This requires work from the co-ordination committee. A clear plan about possibilities, aims and future plans is needed to establish working relationships between relevant partners.

Seeking partners requires participation in national and international meetings as well as in working groups. Active participation in Afri-MAB work is essential, but contacts to other BRs and networks such as Arab-MAB, Euro-MAB and Asia-MAB would enrich influences from other areas. Solutions to problems are not necessarily most easily found from similar areas. Taking part in the other networks also promotes the work of the area and makes it known to others.

International co-operation is expensive. This fact emphasizes the importance of the goals of the co-operation. A mission for each meeting is needed and this mission should be in straight and close connection with the promotion and activities of the BR.

9.5 The Status and Level of Biodiversity and Other Research, Especially from UNESCO-based International Angle

9.5.1 Research

In general, East Usambara nature is fairly well studied. The researchers, however, have been less interested in socio-economy, culture and history.

The start of biodiversity research in East Usambara dates back to the 19th century. This long line of research that has been done and studies that have been published has produced an extraordinary series of records on biota. The versatility and originality of the nature combined with the long history of research have invited new projects into the area. Projects such as EUCAMP have continued doing the baseline diversity studies in the forest reserves. For this reason there is a comprehensive background of basic biota that concerns almost all of the reserves. After collection these data are computerised for further use. In addition, some information concerning vascular plants is being computerised and harmonised by EUCAMP. The information has been published in reports and is available at www.usambara.com.

From an international point of view it is important to get all the information indexed and have it made available from the Biosphere Reserve Integrated Monitoring

database (BRIM) that is maintained and updated in the United States. This database consists of information about species that is not the primary data. This is otherwise known as metadata. BRIM would help in creating even greater awareness about the biodiversity values of the East Usambara area. It would also help the world scientific community in directing further studies to the area.

There also exists a comprehensive set of aerial photographs that are used for detecting the changes in land use. These photos have been collected for over the past 50 years.

There is less background for the development function of the BR in the studies that have been done. There are a few scattered studies available concerning nature tourism but the baseline information of the area is largely missing.

A baseline study about socio-economy should be done together with the possible revision of the boundaries of the area. This type of study would then serve as a platform for all future research and development activities.

Doing this study would also serve as promotion of the BR because all the villages and all basic information would need to be covered in the study.

9.6 Establishment of Efficient In-country Co-ordination Between Tanzanian Biosphere Reserves

9.6.1 Present Co-ordination Between Biosphere Reserves

There are three BRs in Tanzania. These are Serengeti - Ngorongoro, Lake Manyara and East Usambara (see Fig 3). The focal point of the Tanzanian MAB is in Dar es Salaam under the Ministry of Environmental Resources.

The discussions at the Focal Point with director Esther J. Kerario and at Lake Manyara BR revealed that at present the co-ordination is weak between the BRs and the National MAB.

Personnel managing BR activities are scarce. For instance, at Lake Manyara BR the total number of employees is more than 100 but not a single person is working full time for the BR. In practice, BR activities carried out at Lake Manyara can be classified as extensions of the National Park activities to the nearby society. There is, however, a co-ordinating body involving different stakeholders that discuss the management issues. No comprehensive management plan for the Lake Manyara catchment area has been done. From the BR point of view, such a plan would be essential in guaranteeing the ecological state of the lake and reserve. Co-operation between Lake Manyara and the Serengeti – Ngorongoro BRs has been minimal.

A national policy concerning the Tanzanian BRs would be necessary in order to improve co-ordination between them. There should be a clear statement available about the following: (1) The purpose of the BRs; (2) Indication about the questions

that are addressed to them; and (3) Clarification about the expected results obtained from the BRs.

If there are tasks to be fulfilled by the BRs there should be someone taking care of the progress at the national level. Financing should also be made available to make the crucial actions possible.

A national BR policy would facilitate directing money from relevant national policies to BRs for pilot studies, testing of new development concepts and monitoring. BRs are co-operative units that combine different interests and collect and store information. A good set of local, regional, national and international partners, in conjunction with extensive background information and culture of co-operation, renders any pilot study to be more effectively conducted in the BRs with less input than in other areas.

The second pre-requisite for effective domestic co-ordination and co-operation is a compatible, capable BR organisation in each one of the reserves. The structure of the organisation does not necessarily need to be similar in each reserve. For constant, working relationships, however, responsibilities of the BR actions should be clearly addressed to someone. The number of persons dealing with BR issues should be numerous enough to enable the formation of an effective working group.

It is obvious that the BR people themselves should know the possibilities of the areas best in addition to the bottlenecks of activities. The same applies to the Tanzanian National MAB. The first step in starting co-operation and co-ordination between the BRs could be a national meeting between the BRs and the National MAB. This meeting would discuss the need of a national policy and its contents. The organisation of constant co-operation between the areas would also be discussed.

It would be advantageous to the promotion of the EUBR if the first of a series of meetings could be organised there. The possibilities of using project money to organise the meeting should be examined.

9.7 Recognition of the Area and Its MAB-status Internationally, Nationally and Locally

9.7.1 Recognition of the Area

EUBR is poorly known and the activities have not yet started. Local people do not know about the area and its possibilities.

Promotion of the area will be started on local, national and international levels. The fundamental assets of the area include biodiversity, water and successful development measures. These will be the main focus for promotion.

The EUBR needs to be mentioned and presented to many different people at a high number of different types of occasions. This makes the composition of the co-operation committee and the commitment of the members especially important.

PART 2. EAST USAMBARA BIOSPHERE RESERVE MANAGEMENT AND CO-OPERATION STRATEGY AND ACTION PLAN 2003 - 2005

10. SWOT

This SWOT (Strengths, Weaknesses, Opportunities, and Threats) table given below has been compiled with the help of background materials, discussions and interviews. It helps to analyse and choose the strategic directions for the development of the EUBR.

SWOT

Strengths	Weaknesses
<ul style="list-style-type: none"> - Biodiversity Hot Spot (i.e. unique flora and fauna with many endemic species) - area is a regionally and nationally important rain collector - water assets - remarkable research history and lots of information about nature objects and biodiversity - area is already used as an international forum for research and education - the main nature values have been protected and thus safeguarded for future, sustainable use - the history of the area is interesting - many international projects in the area (e.g. EUCAMP) - the area is a target of various interests from different international conservation efforts (e.g. TFCMP: Eastern Arc Component) - several examples of development in nationally important issues of sectoral policies (village forestry, poverty reduction, income generating activities) - villages, districts and Tanga region are unanimous about the direction of biosphere reserve development - area offers lots of examples to be used in other parts of the reserve as examples for helping development 	<ul style="list-style-type: none"> - the area is poorly known by wide public - there is no national policy for use and developing the biosphere reserves - there is no full time personnel for the biosphere reserve - contacts between the biosphere reserves are weak - no co-ordinating body of the BR has been established - no management and co-ordination plan for the area - the actors in the area know each other and actions poorly - the skills of the villagers to participate in development actions are considerably weak - road network, water and power supply, healthcare and education in general not well developed - baseline information about the biosphere reserve socio-economy is missing
Opportunities	Threats
<ul style="list-style-type: none"> - unique nature offers lots of options to market the area - water will be one of the world's mega trends in the next stage of development - New Land Use Act offers unique possibilities for development when the land will be privatized: internationally interesting results possible - land privatization examples from Finland after World War II might be of use in organising land privatization - government realises the opportunities of the BRs and creates a new BR policy for the country - a good and relevant set of actors (administration, research, enterprises) available in the area and nearby - MAB concept is a neutral one and it can be used to draw different stakeholders behind the same table - the efforts and money of various actors can be combined to improve local standard of living and creating new income opportunities - the results obtained attract national and international attention and generate more money and research and development activities - Derema Compensation money offers unique opportunities to boost development at the local level - MAB concept can be used to combine sectoral policies for comprehensive, concrete development projects with minimum new bureaucracy and extra money - the existing project administrative structures can be converted to a MAB structure - villages offer good examples, e.g., about soil conservation practices, of various methods to help in reducing women's workload and about income generating activities to be used in other villages within BR and also outside 	<ul style="list-style-type: none"> - nature conservation will be overemphasized causing infringement on rights of local communities - nature values will be eradicated due to insufficient knowledge about soil conservation practices etc. and consequent misuse of forests (illegal forestry, careless use of fire etc.) - development of tourism does not offer an economically viable alternative to the growing population and benefit sharing does not take place - there will be no national policy for biosphere reserves and national funding will be lacking - donors don't accept the MAB-umbrella but continue to work on their own in separate projects - the common will to solve the problems cannot be developed to result in successful projects

11. LOGICAL FRAMEWORK

East Usambara Biosphere Reserve Strategy Has Been Compiled Into the Form of a Logical Framework for the years 2003-2005.

	LOGICAL FRAMEWORK			
	Intervention Logic	Objectively Verifiable Indicators of Achievement	Sources and Means of Verification	Assumptions
Overall objectives	<i>Overall broader objectives</i>	<i>Key indicators related to overall objectives?</i>	<i>Sources of information for these indicators?</i>	
	<i>Reorganisation of Tanzanian biosphere reserve structures</i>	<ul style="list-style-type: none"> - a new national policy accepted for biosphere reserves - specific funding allocated for biosphere reserves - constant contacts established between Tanzanian biosphere reserves 	<ul style="list-style-type: none"> - legislation and administrative documents - documents about national meetings 	<i>Biosphere reserve concept is a good means for development and thus also interesting from national point of view, it offers good possibilities to test and monitor influence of important national policies and programs, such as Poverty Reduction Strategy, National Forest ...</i>
	<i>Establishing East Usambara Biosphere Reserve structures</i>	<ul style="list-style-type: none"> - official nomination of a full-time biosphere reserve co-ordinator - establishment of biosphere reserve co-ordinating committee - acceptance of biosphere reserve management guidelines 	<ul style="list-style-type: none"> - administrative documents - documents about committee meetings 	<i>To gain the benefits from the biosphere reserve also organisation needs to be properly done</i>
	<i>Broadening the basis of economic activities in East Usambara Biosphere reserve with help of local means and area's specificities</i>	<ul style="list-style-type: none"> - structure of sources of livelihood, - number of enterprises in nature tourism - co-operational BR enterprises established in the region 	<ul style="list-style-type: none"> - statistics of economy 	<i>Nature tourism offers a viable possibility to diversify the economy of East Usambara Area</i>
Purpose of the project	<i>Specific objectives to be achieved</i>	<i>Quantitative or qualitative indicators showing whether and to what extent the specific objectives are achieved?</i>	<i>Sources of information existing or to be collected? Methods required to get this information?</i>	<i>Factors and conditions not under the direct control of the project which are necessary to achieve objectives? Risks to be considered?</i>
	- Influencing on the development of the Tanzanian biosphere reserve administration and status of the BRs	New BR policy created and funding allocated	Government documents	Government is difficult to influence on if the right persons are not involved in the actions
	- Nomination of the EUBR co-ordinating	Co-ordination committee and co-	Committee meeting documents	Contact to MAB Tanzania is weak,

	<i>committee and a full time co-ordinator</i>	<i>ordinator have started working</i>		<i>national MAB is inactive</i>
	<i>- Preparation of the EUBR management guidelines</i>	<i>Management document ready</i>	<i>Documents</i>	<i>Managment authorities and relevant stakeholders are not interested in the work</i>
	<i>- Revision of the delineation of BR zoning</i>	<i>New delineation maps prepared</i>	<i>Maps</i>	<i>Workload is too much if the personnel is minimal</i>
	<i>- Starting socio-economic background studies in EUBR</i>	<i>Socio-economic information has been gathered from the villages and reported</i>	<i>Reports</i>	<i>No appropriate researchers available for the work; villages are not willing to participate in collection of the information</i>
	<i>- Starting new collaborative actions with local enterprises</i>	<i>Number of new enterprises established, number of collaboration plans and agreements signed</i>	<i>Statistics, interviews etc.</i>	<i>MAB-status is being used without real will to work according to the agreed rules</i>
	<i>- Developing a new culture of marketing and being noticed as a nature tourism area and research site</i>	<i>Various promotional actions have taken place and lots of articles etc have been published about EUBR</i>	<i>Articles from various sources, public speeches, involvement of new partners</i>	<i>No great risks</i>
Expected results	<i>Concrete outputs envisaged to achieve the specific objective</i>	<i>Indicators to measure whether and to what extent the project achieves the envisaged results and effects</i>	<i>Sources of information for these indicators</i>	<i>External factors and conditions to be realised to obtain the expected outputs and results on schedule?</i>
	<ul style="list-style-type: none"> <i>- negotiations with the relevant national and international officials</i> <i>- meetings and negotiations with relevant regional and local officials and local people</i> <i>- meetings of the co-ordination committee and working groups</i> <i>- field and laboratory work for redefining the BR zoning</i> <i>- research work in the field and in office</i> <i>- writing of reports</i> <i>- collaboration negotiations with enterprises</i> <i>- use of all project events and materials for promoting the area and making it known as a nature tourism resort</i> <i>- linking all the ongoing projects actively</i> 	<ul style="list-style-type: none"> <i>Changes in policy</i> <i>Nr of successful meetings</i> <i>Field and lab. Work days</i> <i>Reports</i> <i>Nr of meetings and negotiations</i> <i>Nr of articles written, speeches, promotional events, press conferences etc. held</i> 	<i>Documents</i>	

	<p>to biosphere reserve and development of the area</p> <p>- negotiations about funding from external sources (donors)</p>	<p>Nr of meetings where these issues have been dealt with</p> <p>Nr of negotiations</p>		
	<i>Envisaged effects and benefits of the project</i>			
	<p>- information about EUBR and Tanga Region spreads to national regional and local as well as to international level</p> <p>- information gathered in previous and present studies will be effectively used for various research and development purposes</p> <p>- the management guidelines bring new collaborative spirit to the area</p> <p>- information about the area's possibilities will be spread at local and regional level (e.g., teachers, administrators, entrepreneurs) via the co-ord. committee</p> <p>- new materials for promoting the area will be compiled, and used in various situations</p> <p>- new ways of promoting the area will be created</p> <p>- new co-operational links between nature conservation personnel, NGOs, official development actors and other interested persons and organisations will be created</p> <p>- financing of the projects will be easier when there is a solid group working on it, and a sound background in the management guidelines</p>			
Activities	<p>Key activities to be carried out and in what sequence in order to produce the expected results?</p>	<p>Means required to implement the activities, e. g. Personnel, equipment, training, Studies, supplies, operational facilities, etc.</p>	<p>Sources of information about progress?</p>	<p>Required pre- conditions</p> <p>Conditions outside direct control to be present for the implementation of the planned activities</p>
	<p>Inviting the relevant persons to the meetings and going to right places</p>	<p>Co-ordinator and selected members of co-ordinating</p>	<p>Meeting documents</p>	<p>Funding, political will</p>

	<i>(national level); preparation of written materials</i>	<i>committee</i>		
	<i>Inviting the relevant persons to the meetings and going to right places (regional and local level); preparation of written materials</i>	<i>Co-ordinator and selected members of co-ordinating committee</i>	<i>Meeting documents</i>	
	<i>Negotiations, compilation of the materials and writing the reports (management guidelines)</i>	<i>Co-ordinator and selected members of co-ordinating committee</i>	<i>Minutes of the meetings, draft versions of the guidelines, ready parts</i>	
	<i>Research in the field and in the lab., writing of reports and computerization of results for further use</i>	<i>Researchers, co-ordinator, other relevant partners, field workers</i>	<i>Reports and other documentation</i>	<i>Funding</i>
	<i>Writing of articles, speeches etc.</i>	<i>All relevant partners and outside writers and researchers</i>	<i>Articles published, speeches given</i>	<i>The relevant materials about EUBR need to be available</i>
	<i>Collaboration negotiations with enterprises (e.g. EUTCO), planning of new products and exploring the possibilities to link the BR activities with existing production</i>	<i>Co-ordinator and relevant committee members</i>	<i>Meeting documents, revenues collected</i>	<i>Suitable enterprises need to be found</i>
	<i>Participation in meetings, seminars, congresses etc.</i>	<i>All relevant partners and co-ordinator</i>	<i>Nr of meetings</i>	<i>Funding</i>

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ANNEXES

ANNEX A. TOR FOR THE CONSULTANCY

TERMS OF REFERENCE FOR THE SHORT TERM CONSULTANCY:
DEVELOPMENT OF MANAGEMENT STRATEGY FOR EAST USAMBARA MAN AND
BIOSPHERE RESERVE

Duty station: East Usambaras / Tanga
Duration: one month, February 2002 – March 2002

Background

In November 2000 the East Usambara mountain range was declared to be a UNESCO classified Man and Biosphere (MAB) Reserve. The classification consolidated the extraordinary values of this 100,000 ha as a unique biodiversity hotspot. Simultaneously, about 100,000 rural people inhabit the adjacent villages.

The establishment of the MAB area of the East Usambaras has been one of the key results of the EUCAMP. EUCAMP has been run in three phases since 1990. Successfully accomplishing MAB status was also a turning point for the whole programme. Before MAB, the conservation of the East Usambara biosphere was carried out by a conventional forest reserve approach. This approach allows no or very little say to adjacent rural villagers. Moreover, benefits are not received from the strictly centrally governed forest reserves. The rural development programme in the adjacent villages was rather separate, although it was important because it compensated for the negligible or limited access of the local population to the biosphere resource.

At the introduction of MAB, the integration of the forest adjacent communities into the management of the biosphere natural resources came into a new phase. The MAB classified core areas, the buffer zones, the transition zones and the rural settlement areas now had to be treated as a unit. This was an East Usambaran MAB mosaic in which the 100,000 villagers now had a key role.

MAB linkages to the Community Based Management of Natural Resources

The new setup under the umbrella of MAB forms the basis for the EUCAMP Work Plan of 2001/2002. It has been linked to recent development in the management of natural resources under the Tanzanian government structure. This has been done in two ways, through the National Forest Programme (NFP) and through Community Based Forest Management (CBFM).

The Government of Tanzania endorsed the National Forest and Beekeeping Programmes (NFP/NBKP) on the 7th of November 2001 as one of the means to implement sector policies. In this regard, CBFM has been identified as a main strategy to ensure effective management of forest resources. In addition, it provides linkages between forest resources utilization, poverty reduction and sustainable livelihoods for local communities. CBFM refers to any forest management regime in

which local people play a major role. The Guidelines applicable to the Tanzanian CBFM were issued by the Ministry of Natural Resources and Tourism in April 2001.

Joint Forest Management (JFM) and Village Forest Management (VFM) have been identified by the NFP to be the two main lines under the Tanzanian CBFM. The management line in JFM and VFM follow the same principles. They will be separated only by tenure. JFM is practiced in Government Forest Reserves, usually National Forest Reserve (NFR). VFM takes place in Village Forest Reserves (VFRs). Rural forest adjacent villages are the target group for both JFM and VFM.

Since the mid 1990s, EUCAMP has been developing CBFMs in its project area. The two NFRs that have been selected as pilot areas for JFM are the Mtai Forest Reserve and the Manga Forest Reserve. Experiences from Mtai and Manga will later be used for other East Usambaran NFRs. The next important forest reserve in the JFM pipeline is the Derema ecological corridor. Its establishment under JFM has been recommended by the Derema adjacent villages.

EUCAMP has also encouraged and facilitated East Usambaran villagers to initiate their own VFR schemes. The pilot VFR has been the Mpanga VFR. Its planning already started in 1994. The Mpanga VFR later became the first VFR in Tanzania which was formally and officially gazetted.

Besides Mpanga, the Handei VFR has been under the process of establishment since 1995, the Kizee VFR since 1999, the Kizingata VFR since 2001 and the Mfundia VFR since 2001. The current planning states of the different VFRs are varied. The management plan for the Mpanga VFR is ready as a final draft. Borders have been surveyed and maps have been drawn for both the Mpanga VFR and Handei VFR. A biodiversity survey has been carried out and documented for the Mpanga VFR. Border demarcation is under process for Kizee, Kizingata and Mfundia.

By their status, the five VFRs in the East Usambaras fall broadly into two categories: (1) Those which have been proposed mainly on ritual or sacred forest background; (2) Those which have been proposed on purely forestry (economic) background. Sacred forests are typically small, like the 24 ha forest of the Mpanga VFR. The Mfundia VFR is a typical economic forestry area with a forested area of about 500 ha and with abundance of important commercial timber species such as karambati and *Brachylaena hutchinsii*. The management options of these categories differ. The ritual Village Forests are instinctively conserved forests with no or strictly limited timber exploitation. The commercial Village Forests are subject to sustained timber exploitation to satisfy the needs of the villagers and for benefit sharing.

MAB Linkages to National Poverty Reduction Strategy

The East Usambara area is rural, poverty stricken, densely populated and ecologically fragile. Therefore, the following national strategic considerations have to be taken into account when developing a MAB strategy that will fully benefit from the recent developments in Tanzanian forestry and biodiversity conservation and utilization:

- The Government of Tanzania (GoT) prepared and endorsed the Poverty Reduction Strategy Paper (PRSP) in 2001 and is presently under process of integrating the environment into the PRSP
- The preparation of the Tanzania Forest Conservation and Management Project (TFCMP) and its Eastern Arc Mountain Forests Conservation Component, or the so-called Eastern Arc Strategy, will be completed in early 2002
- The second phase of the Local Government Reform Programme (LGRP) will be started early 2002 to include new districts under the LGRP activities

In the Poverty Reduction Strategy Paper that the GoT developed in 2000, the Government recognized the dependence in Tanzania of the poor on environmental resources. The dependence was particular to forest products that include charcoal, honey, wild fruits and firewood that serve both for income generation and for consumption. The Government indicated that it intended to find ways of incorporating environmental indicators into its poverty monitoring system. This would be done in order to capture this dependency and to capture poverty and environment linkages more fully in future updates of the Poverty Reduction Strategy.

The purpose of this consultancy is to establish a comprehensive management strategy for the East Usambara MAB area, in which the high conservation values of the unique rainforests can be combined into community based, rural poverty reducing natural resource management.

Specific Tasks

Along with the Tanzanian National development for UNESCO/MAB areas and with the principles stated by the Tanzanian environmental, forest and other relevant laws, acts and policies, the consultant should address the following:

- The status and level of progress of management of the East Usambara MAB area, as comparable to other African or tropical MAB areas.
- The present setup and validity of MAB zoning including the core areas, buffer zones, transition areas and settlement areas, along with advice and facilitation in updating the zoning, if deemed necessary.
- Advice and facilitation in the establishment of a permanent linkage between the MAB concept and Community Based Natural Resource Management in the East Usambaras.
- Advice and facilitation in the establishment of a permanent linkage between the MAB concept and poverty reduction programmes.
- Advice for the establishment of all necessary international networks, UNESCO-based and otherwise, that are needed for successful international MAB cooperation.
- Assessment of the status and level of biodiversity and other research, especially from a UNESCO-based international angle, along with advice on strengthening the research, if deemed necessary.
- Assessment and facilitation in the establishment of efficient in-country coordination within all Tanzanian MAB-areas.
- Preparation of a one year action plan and a five year management strategy for the East Usambara MAB area.

ANNEX B. TIME-TABLE FOR THE ACTIVITIES AT TANGA REGION

Date	Activity	Output
13.2.	Departure from Joensuu	Moving
14.2.	Arrival at Tanga	Moving
15.2.	Meeting Mr Lema, organizational arrangements	Getting acquainted
16.2.	Visiting Maramba forest station & Matemboni village	field trip to see the marking of the forest reserves
17.2. Sun	At the sea	resting
18.2.	Organisational arrangements, preparation of activity plan (Matiko, Sawe, Raymond K., Veli P. & mamas)	Getting organised
19.2.	Preparing strategy for the process, preparing documents and presentation for the Finnish Foreign Ministry officials visiting in Tanga (Heli Sirve, Kirsikka Lehto);	Report , presentation
20.2.	Finnish Foreign Ministry officials; field trip to Amani & discussions; MAB Presentation to HS & KL	Getting acquainted with the target area, discussing about future options
21.2.	Report writing, Discussions with VP Discussions with ANR Ecotourism Assistant	Report Background information
22.2.	Field Trip/Veli Pohjonen, Bombo FR	Discussions with the forest inventory personnel
23.2	Field Trip/Veli Pohjonen Discussions with AL Simula	Buffer zone problems
24.2. Sun	Writing	Report
25.2.	Raymond Kilenga: Map issues I (Map Info): needs and opportunities, preparing the revision of the BR borders (layers) Introduction on Biosphere Reserve to the EUCAMP Management Identifying population distribution within EU Biosphere Reserve Information exchange with EU Ecotourism consultant.	Plans for mapping population distribution Awareness raising Preparation of field excursion Getting acquainted with the work of Ecotourism consultant
26.2.	Contacting Regional Engineer's office Making contacts with different relevant authorities (Tanga Region) Field visit to IBC Msasa village	Identifying constraints imposed to local communities due to expansion of forest reserve. Identifying possible intervention of solving existing problems. Identifying relevancy of expanding forest reserves (establishment of Derema ecological corridor) and

		compatibility of conservation to livelihood of local communities. Plan for better houses
27.2.	Visit to Gereza Village	Identifying constraints imposed to local communities due to expansion of ANR. Identifying possible intervention of solving existing problems. Plan on how to improve handcrafts for better market and more income (what resources required for handcraft improvement? Is this one of the ways forward for improving livelihood of local communities? Why Gereza village use brick houses and not upland villages e.g. IBC Msasa village)
28.2.	Visit to East Usambara Tea Company Report writing Planning for discussion with decision makers	Possible institutional set up and modalities of cooperation of different institutions (e.g. EUTCO) under East Usambara Biosphere Reserve How East Usambara Tea Company considers conservation aspects and national poverty reduction strategy? How to harmonize the two. Main development strategy of EUTCO and their influences to EU Biosphere Reserve (Possibilities to support Ecotourism in the East Usambara). Needs for improved performance.
1.3.	Raymond Kilenga: map issues II (Map Info): checkout of the map production situation (layers) Taina Veltheim: village forestry Visit DC Muheza: DC, MP Visit DC Korogwe, DC, DED, MP, FO	Identifying awareness of decision-makers on East Usambara Biosphere Reserve and its importance. Assembling the view of Decision-makers on the way forward in managing East Usambara Biosphere Reserve. Possibilities of decision-makers to secure/to develop funding mechanism to support livelihood of communities within EU Biosphere Reserve (long term and short term plans). Role of decision-makers to safeguard EU Biosphere Reserve.
2.3.	Report writing	Report
3.3. Sun	Report writing	Report

4.3.	Visit Mlingano soil research institute: Director Travelling to Dar es Salaam	Identifying researches which had been conducted within East Usambara Biosphere reserve Data base and other resources and facilities available (also existing potentials) Possibilities of widening the areas of collaborations. How the research institute is linked with other institutes within and outside Tanzania Awareness of the institution on East Usambara Biosphere Reserve (EU Biosphere reserve as focal point for donors including UNESCO, FAO etc). Possibility of securing map for soil fertility and productivity of EU biosphere reserve (GIS information).
5.3.	Discussion with Director of Forestry and Beekeeping Division, prof Iddy. Discussion with MAB officials: Esther J. Kerario	Role of FBD in managing EU Biosphere Reserve Future of EU under new land act, new forest act and economic reform including privatization of FRs. Possible ways of ministerial/departments collaboration in managing EU Biosphere Reserve How can the FBD/MNRT tap the potentiality of East Usambara being declared MAB reserve for sustainability of conserving East Usambara forests and improving livelihood of local communities? How will the MNRT ensure information exchange of EU Biosphere Reserve and other MAB areas within and outside the country?
6.3.	Travelling to Arusha	Moving, Discussions with Sawe
7.3.	Visit to Lake Manyara Biosphere Reserve: Director	Understanding the present situation concerning Tanzanian biosphere reserves
8.3.	Travelling to Tanga	Moving, Discussions with Sawe
9.3.	Report writing, discussions Travelling to Dar es Salaam	Plans for finishing the job
10.3. Sun	Departure from Dar es Salaam	Moving
11.3.	Arrival at Joensuu	Arrival

ANNEX C. MAIN MEETINGS AND INFORMANTS

From where	Name	Position	Meeting essentials
EUCAMP personnel	Dr. Veli Pohjonen	Chief Technical Adviser	Daily in Tanga
EUCAMP personnel	Mr. Lema Matthias	Project	general issues
EUCAMP personnel	Mr. T. C. Sawe	Conservator, Amani Nature Reserve	Daily in Tanga, all managerial and co-operational issues
EUCAMP personnel	Mr. Raymond Kilenga		map issues (Map info database)
EUCAMP personnel	Ms. Taina Veltheim	Participatory forestry	Village forest issues
EUCAMP personnel	Ms. Irmeli Mustaniemi	Participatory forestry	Village forest issues
EUCAMP home co-ordinator	Ms. Anna-Leena Simula	Home Co-ordinator	All issues
Korogwe District		MP	Co-operation
Muheza District		MP	Co-operation
Tanga Region		RAS	Co-operation
Muheza District		DED	Co-operation
Korogwe District		DED	Co-operation
		WS	Co-operation
Msasa IBC village		Village chairman	Village issues, co-operation
Gereza village		Village chairman	Village issues, co-operation
External experts		EU ecotourism consultant	Tourism industry
MAB Tanzania	Ms Esther J. Kerario	Director	BR administration in Tanzania
Ministry of Natural resources	Prof. Iddy	Permanent secretary of the minister (v.a.)	Administrational issues
Lake Manyara BR		Park Director	BR issues
Lake Manyara BR		Ecotourism	

ANNEX D. WHAT IS A BIOSPHERE RESERVE?

The information has been obtained from UNESCO web-pages www.unesco.org/mab.

Biosphere Reserves

Biosphere Reserves are areas of terrestrial and coastal ecosystems which are internationally recognized within the framework of UNESCO's Man and the Biosphere (MAB) Programme. Collectively, they constitute a World Network. They are nominated by national governments and must meet a minimal set of criteria and adhere to a minimal set of conditions before being admitted into the World Network.

Each Biosphere Reserve is intended to fulfil three basic functions, which are complementary and mutually reinforcing:

- a conservation function - to contribute to the conservation of landscapes, ecosystems, species and genetic variation
- a development function - to foster economic and human development which is socio-culturally and ecologically sustainable
- a logistic function - to provide support for research, monitoring, education and information exchange related to local, national and global issues of conservation and development

Individual biosphere reserves remain under the sovereign jurisdiction of the countries in which they are situated. Some countries have enacted legislation specifically to establish biosphere reserves. However, in many cases, advantage is taken of the existence of areas already protected under national law to establish biosphere reserves. Biosphere reserves consist of a core area, a buffer zone and a transition area. Only the core area requires legal protection.

A number of biosphere reserves simultaneously encompass areas protected under other systems, such as national parks or nature reserves, and other internationally recognized sites such as World Heritage or the Ramsar wetland sites.

Ownership arrangements may vary. The core areas of biosphere reserves are mostly public land, but may also be privately owned or belong to non-governmental organisations. In many cases, the buffer zone is in community or private ownership, and this is generally the case for the transition area.

Establishing a biosphere reserve obviously poses an enormous challenge, namely to set up an appropriate mechanism. For instance, such a mechanism could include a Committee to plan and co-ordinate all the activities that will take place in the reserve. This human dimension of biosphere reserves makes them special, since the management essentially becomes a "pact" between the local community and society as a whole.

Management needs to be open, evolving and adaptive. Such an approach requires perseverance, patience and imagination. This will allow the local community to be better placed to respond to external political, economic and social pressures, which would affect the ecological and cultural values of the area.

The Origin of Biosphere Reserves

Biosphere Reserves are designed to meet one of the most challenging issues that the World is facing as we enter the 21st century: How can we conserve the diversity of plants, animals and micro-organisms which make up our living "biosphere" and maintain healthy natural systems while, at the same time, meet the material needs and aspirations of an increasing number of people? How can we reconcile conservation of biological resources with their sustainable use?

Current trends in population growth and distribution, increasing demands for energy and natural resources, globalization of the economy, the effects of trade patterns on rural areas, the erosion of cultural distinctiveness, centralization, the difficulty of access to relevant information and the uneven spread of technological innovations - all of these paint a sobering picture of environment and development prospects in the forthcoming years.

These trends cannot be addressed by countries on their own. In 1968, the UNESCO Conference on the Conservation and Rational Use of the Biosphere was the first major intergovernmental meeting that examined these issues. It gave rise to the launching of the Man and the Biosphere (MAB) Programme within UNESCO. The biosphere reserve concept was a key component for achieving the MAB objective of striking a balance between the apparently conflicting goals of conserving biodiversity, promoting economic and social development and maintaining associated cultural values. Biosphere Reserves were conceived as sites where this objective was to be tested, refined, demonstrated and implemented. The name "Biosphere Reserve" was chosen with the MAB Programme in the early 1970s to identify these special, experimental sites.

In 1992 in Rio de Janeiro, the United Nations Conference on Environment and Development brought these issues to the attention of the world leaders. Agenda 21 and the Conventions on Biological Diversity, Climate Change and Desertification were agreed upon to show the way forward towards what is now termed sustainable development. This means caring for the environment and living from the interests of the land with greater social equity and without depleting its capital, while including respect for rural communities and their accumulated wisdom. The global community needs working examples that encapsulate the ideas of the Rio Conference. Such examples can only work if they express all the social, cultural, spiritual and economic needs of the society and are based on sound science.

In 1995, the International Conference on Biosphere Reserves held in Seville, Spain confirmed that Biosphere Reserves offer such examples. Biosphere Reserves, therefore, have a new role to play at the global level. A role that provides a way for people who live and work within and around them to attain a balanced relationship with the natural world and explore how to meet the needs of society by showing the way to a more sustainable future.

Why Do We Need Biosphere Reserves?

To conserve biological diversity: Human pressures on land and water resources are drastically reducing the diversity of genes, plant and animal species, ecosystems

and landscapes of the planet. This threatens human welfare because this biodiversity is the potential source of foods, fibres, medicines, and raw material for industry and building. It constitutes an irreplaceable wealth for research, education and recreation for the whole of humankind. The core areas and buffer zones of biosphere reserves serve as repositories to safeguard samples of biodiversity from major biogeographical regions of the world. These regions of the biosphere reserves also serve as reference and study sites to help improve our knowledge on biodiversity.

To maintain healthy ecosystems: Biosphere reserves, which may represent large areas of land and water, contribute significantly to the maintenance of the life support systems which serve to avoid soil erosion, maintain soil fertility, regulate river flow, recharge aquifers, recycle nutrients, and absorb air and water pollutants.

To learn about natural systems and how they are changing: Research may be conducted on the structure and dynamics of the minimally disturbed natural systems of the core areas of biosphere reserves and compared with the functioning of human-affected landscapes in the buffer and transition areas. When carried out over a long term, such studies show how these systems change over time. Comparison of regional and worldwide results can be done by setting up similar long-term monitoring plots, harmonizing methods and measurements. The information obtained allows us to better understand global environmental changes.

To learn about traditional forms of land-use: People in many parts of the world have devised, over a long period of time, ingenious land-use practices which do not deplete the natural resources and which can provide valuable knowledge for modern production systems. Biosphere reserves are areas where such peoples can maintain their traditions, as well as improve their economic well-being through the use of culturally and environmentally appropriate technologies. Moreover, such traditional systems are highly useful for conserving ancient breeds of livestock and old land races of crops that are invaluable gene pools for modern agriculture.

To share knowledge on how to manage natural resources in a sustainable way: Research to find land-use practices that improves human well-being without degrading the environment is a central purpose of biosphere reserves. The lessons learned are transmitted at the field level through on-the-spot training and demonstrations. They can then be applied in the transition area and beyond the region. Government officials, national and foreign scientists, visitors and local community leaders all benefit from this experience. The biosphere reserve thus serves to share knowledge and skills at the local, national and international levels.

To co-operate in solving natural resources problems: A major obstacle to reconciling environment with development is the sectoral structure of our institutions. Biosphere reserves provide places where conflicts of interest can be debated by all the stakeholders concerned. This includes local officials, local landowners, nature conservation associations, government leaders, scientists, local farmers, fishermen and private enterprises. Everyone must work together to find appropriate coordination mechanisms to plan and manage the biosphere reserve. Biosphere reserves, therefore, provide opportunities for conflict resolution which could be applied in other land and water development issues.

How are Biosphere Reserves Organised?

To carry out the complementary activities of nature conservation and use of natural resources, biosphere reserves are organised into three interrelated zones. These are the core area, the buffer zone and the transition area.

The core area needs to be legally established to give long-term protection to the landscape, ecosystem and species it contains. It should be sufficiently large to meet these conservation objectives. As nature is rarely uniform and as historical land-use constraints exist in many parts of the world, there may be several core areas in a single biosphere reserve to ensure a representative coverage of the mosaic of ecological systems. Normally, the core area is not subject to human activity, except for research, monitoring and, as the case may be, traditional extractive uses by local communities.

A buffer zone, or zones, is clearly delineated and surrounds or is contiguous to the core area. Activities are organized in these zones so as to not hinder the conservation objectives of the core area but to help protect it. Hence, the idea of "buffering" is demonstrated. These zones can be areas for experimental research. For example, to discover ways of managing natural vegetation, croplands, forests, fisheries, or to enhance high quality production while conserving natural processes and biodiversity, including soil resources, to the maximum extent possible. In a similar manner, experiments can be carried out in the buffer zone to explore methods of rehabilitating degraded areas.

An outer transition area, or area of co-operation extending outwards, may contain a variety of agricultural activities, human settlements and other uses. It is here that the local communities, conservation agencies, scientists, civil associations, cultural groups, private enterprises and other stakeholders must agree to work together to manage and sustainably develop the area's resources for the benefit of the people who live there. Given the role that biosphere reserves should play in promoting the sustainable management of the natural resources of the region in which they lie, the transition area is of great economic and social significance for regional development.

Although presented schematically as a series of concentric rings, the three zones are usually implemented in many different ways to accommodate local geographic conditions and constraints. This flexibility allows for creativity and adaptability, and is one of the greatest strengths of the concept.

Who Benefits from Biosphere Reserves?

Local communities: These range from local indigenous communities to rural societies, including country home owners. There are various potential benefits to such people, such as protection of basic land and water resources, a more stable and diverse economic base, additional employment, more influence in land-use decision-making, reduced conflict with protected area administrations and interest groups, a continued opportunity to maintain existing traditions and lifestyles, and a more healthy environment for these local communities and their children.

Farmers, foresters, fishermen: Biosphere reserves provide access to training and demonstration projects on alternative land-uses and management strategies that aim to maintain natural values of soil fertility and water quality, among other resources. This makes the best use of the available human and financial resources.

Scientists: Biosphere reserves encourage research on aspects such as ecological processes or biological diversity. They are areas offering a growing database on which to build new hypotheses and experiments. In addition, biosphere reserves provide long-term security for permanent plots and monitoring activities that serve to identify long-term trends over short-term fluctuations that may be caused by changes in climate or other factors. Biosphere reserves also allow for interdisciplinary research, monitoring of comparative studies and information exchange. They can thus encourage the allocation of national or international research funds.

Government decision-makers and agencies: Biosphere reserves provide them with better information on natural resources and enhanced technical and institutional capabilities to manage natural resources in a sustainable manner. They help to procure greater public support for nature conservation by demonstrating the practical benefits that are involved. They serve as working examples to explore how one can sustainably manage natural resources at the local and regional levels. They also illustrate what institutional and legal mechanisms are needed. In doing so, biosphere reserves serve as tools to enable countries to meet their obligations under international Conventions such as those on Biological Diversity and Desertification and Agenda 21.

The world community: Biosphere reserves demonstrate to the public opinion and the world community practical ways on how to resolve land-use conflicts and to ensure protection of biological diversity. They offer opportunities for education, recreation and tourism. They help create a consciousness of solidarity among all peoples of the world to sustainably manage the biosphere.

How are Biosphere Reserves Selected?

Biosphere reserves cover the great variety of natural areas of the biosphere, going from high mountains to greatly human-impacted plains, from coastal regions and islands to vast inland forests and from the deserts of the tropics to the tundra of the Polar Regions. To qualify for designation as a biosphere reserve an area should normally meet the following criteria:

- Be representative of a major bio-geographic region, including a gradation of human intervention
- Contain landscapes, ecosystems or animal and plant species or varieties which need to be conserved
- Provide an opportunity to explore and demonstrate approaches to "sustainable development" within the larger region where they are located
- Be of an appropriate size to serve the three functions of biosphere reserves mentioned above
- Have an appropriate zoning system with a legally constituted core area, or areas, devoted to long-term protection, a clearly identified buffer zone, or zones, and an outer transition area.

Organisational arrangements should be provided for the involvement and participation of a suitable range of public authorities, local communities and private interests in the planning and management of the biosphere reserve. In the case of large natural areas which straddle national boundaries, countries are encouraged to co-operate in setting up and jointly managing trans-boundary biosphere reserves.

National MAB Committees or focal points are responsible for preparing biosphere reserve nominations and for involving the appropriate government agencies, relevant institutions and local authorities in preparing the nomination. Each nomination is examined by a UNESCO Advisory Committee on biosphere reserves for recommendation to the International Co-ordinating Council of the MAB Programme. This Council takes a decision on nominations for designation and the Director-General of UNESCO notifies the State concerned of the decision.

Once designated, the appropriate authorities are encouraged to publicize their biosphere reserves. This can be done with a commemorative plaque and by distributing information material indicating this special status.

Who is Participating?

At the site level

Biosphere Reserves bring together many scientists, local officials, representatives of various national institutions and the local inhabitants.

At the national level

Biosphere Reserves should form an integral part of national biodiversity plans for implementing the Convention on Biological Diversity. They should bring together the institutions involved in nature conservation with the sustainable use of natural resources.

At the international level

Many international governmental and non-governmental organizations are associated with the functioning of the World Network and the application of the concept at the field level. There are thus many projects to promote conservation and appropriate development in Biosphere Reserves. These are supported by the World Bank, the United Nations Development Programme (UNDP), the United Nations Environment Programme (UNEP), the Food and Agriculture Organisation of the United Nations (FAO), the World Conservation Union (IUCN), Conservation International and the World Wide Fund for Nature (WWF). There are an increasing number of projects sponsored by private enterprises, keen to demonstrate their environmental concerns.

Biosphere Reserve "<http://www.unesco.org/mab/docs/document.htm>" is available on the MABnet.

In the "[wnbr.htm](#)" you will find information on all the biosphere reserves. As of September 2001, 94 countries have established 411 Biosphere Reserves.

Why a World Network?

Although biosphere reserves have very different geographical, economic and cultural contexts, they do have a common interest to seek concrete solutions that reconcile the conservation of biodiversity with the sustainable use of natural resources for the benefit of local people. The World Network fosters exchanges among biosphere reserves. For example, research results or experience in resolving specific issues and the facilitation of co-operative activities, including scientific research and monitoring, environmental education and specialist training, are both exchanged among reserves.

Exchanges can take various forms, some of which include distributing information material, articles in the international bulletin, co-operative projects, twinning arrangements, swapping personnel, organizing visits, or correspondence by mail or electronic mail. The World Network is supported by regional or sub-regional networks such as in East Asia. It is also supported by thematic networks that study biodiversity. The creation of these types of sub-networks is encouraged. Progressively, it is intended to link all biosphere reserves through modern communication channels.

The World Network is formally constituted by a Statutory Framework that resulted from the work of the International Conference on Biosphere Reserves that was held in Seville, Spain in March 1995. This Statutory Framework sets out "the rules of the game" of the World Network and foresees a periodic review of biosphere reserves. Activities of the World Network are guided by the "Seville Strategy for Biosphere Reserves" that was also drawn up at the Seville Conference. At present, not all existing biosphere reserves fully participate in the Network and these guiding documents will help to improve their functioning in the forthcoming years.

ANNEX E. SOCIAL FORESTRY AND COMMUNITY BASED ACTIVITIES IN EUCAMP

Taina Veltheim, Social Forestry Adviser in EUCAMP

Introduction

The overall objective of EUCAMP is to ensure effective conservation of forests in the East Usambaras for the preservation of biological diversity, promotion of sustainable catchment forestry and land use management that benefits local and global communities. The forests in the East Usambaras are surrounded by more than 70 communities with over 100,000 people who require forest products mainly for domestic use. Thus, involvement of local communities in the management of forests has been given a top priority in the last phase of EUCAMP. Other social forestry activities are conducted to support the management of natural forests by providing alternatives.

Community Based Forest Management

JFM and VFM have been identified by the NFP to be the two main lines under CBFM. JFM is practised in Government forest reserves, whereas VFM takes place in VFR. The management planning and implementation in JFM and VFM follow the same principles.

Each participating village selects a temporary planning team that prepares a management plan and a by-law. EUCAMP gives technical assistance to the planning team by facilitating the process. The management plan will set the rules and procedures for the management of the forest and the use of forest products from the reserve, whereas the by-law will define how offenders should be handled. The main responsibility of the overall implementation of the management plan is usually given to a committee such as an environmental committee or forest management committee that is elected by the villagers. The draft management plan and by-law is presented through the village government at the village meeting. After approval they are forwarded through the Ward Development Committee to the District Council for final approval.

JFM of central government catchment forest reserves is tested in two forest reserves, Mtai that is 3,107 hectares and Manga that is 1,616 hectares. Both are in the Muheza District. Mtai forest reserve is surrounded by eight villages and Manga by three villages. Each adjacent village is assigned a VFM area. The forest reserves are also divided into different zones. The main objective of the biodiversity and catchment zones is the conservation of resources. The utilisation zone can be used according to the rules of the management plan.

Facilitating the establishment and management planning of village forest reserves is done in collaboration with District Councils. Currently EUCAMP is working with five village forest reserves. These are Mpanga with 24 ha, Handei with 156 ha, Kizingata with 22.5 ha, Kizee with about 25 ha that is in Muheza and Mfundia with about 600 ha that is in the Korogwe District. VFR is usually owned and managed by one village, but can also have joint management. This is the case with Mpanga and Kizee, which both are managed by two adjacent villages. Mfundia is surrounded by five villages. Most likely in the near future it will be divided into four individual reserves. Three of the reserves would be managed by one village and the fourth managed jointly by two neighbouring villages.

Farm Forestry

In order to reduce pressure on natural forests, villagers are assisted in on-farm nursery establishment, tree planting and management and agroforestry. Farmers are given technical advice and some minor input, like tree seeds and polythene tubes. Seedlings are raised by individual farmers, groups of farmers including both women groups and mixed groups, schools and by other institutions including churches. In 2000/2001 there were altogether 257 on-farm nurseries in 46 villages having a total of 236,000 tree seedlings and 91,000 seedlings of fruit trees and spices.

Soil Conservation

Many farmers in the East Usambaras have farms on steep slopes. Training on soil conservation measures aims at increasing productivity of the farmland by reducing soil erosion and introducing natural fertilisers like manure. The so called training-of-trainers-method is used in this activity wherein trained farmers are used as trainers in other villages. Also farmers' study tours are organised.

Energy Saving Woodstoves

In rural villages wood fuel is the main source of energy and collecting firewood is the task of women and girls. In order to reduce the workload of women and pressure to natural forests, villagers are trained in building, maintaining and using energy saving woodstoves. Most optimistic estimates by local users indicate that these stoves can save energy up to 50%. Some models of stoves are also contributing to the health by taking the smoke outside from the cooking hut.

Fish Farming and Beekeeping

Illegal hunting and fishing and collecting of wild honey by local villagers sometimes take place in forest reserves. Hunting and collecting wild honey are particularly serious threats to forests as fire is commonly used in these activities. Fish farming and beekeeping with modern beehives and equipment are introduced as alternatives.

Spices Cultivation

The most valuable cash crop in the East Usambaras is cardamom, which is cultivated under a tree cover. The most preferred site for a cardamom field is in the natural forest. In the establishment of the Amani Nature Reserve and the proposed Derema Forest Reserve, areas of cardamom fields with good tree cover were included in these reserves after agreement with the villagers. Cultivation of other spices as alternative valuable cash crops, like black pepper and cinnamon, has been introduced to farmers to replace cardamom cultivation.

Gender Strategy

The programme is putting a special emphasis on improving the participation of women in forest conservation and engaging them in income generating activities. A detailed gender strategy has been prepared for EUCAMP and the staff and the villagers are being trained in gender relations.

ANNEX F. SUMMARY OF ABBREVIATIONS

ARI – Agricultural Research Institute
a.s.l – above sea level
BR – Biosphere Reserve
BRIM – Biosphere Reserve Integrated Monitoring
CBFM – Community Based Forest Management
EU – The European Union
EUBR – East Usambara Biosphere Reserve
EUCADEP – East Usambara Conservation and Agricultural Development Programme
EUCAMP - East Usambara Conservation Area Management Programme
EUCFP – East Usambara Catchment Forest Project
EUTCO – East Usambara Tea Company
FAO – UN Food and Agriculture Organisation
FINNIDA – Finnish International Development Agency
GIS – Geographical Information System
GoT – Government of Tanzania
ha – hectares
IUCN – World Conservation Union
JFM – Joint Forest Management
LGRP –Local Government Reform Programme
MAB – Man and Biosphere
NFP – National Forest Programme
NFR – National Forest Reserve
NGO – Non-profit Government Organisation
NORAD – Norwegian Agency for Development
PRSP – Poverty Reduction Strategy Paper
TAFORI – Tanzania Forest Research Institute
TFCMP – Tanzania Forest Conservation and Management Project
TOR – Terms of Reference
UNESCO – United Nations Educational, Scientific and Cultural Organization
UNDP – United Nations Development Programme
UNEP – United Nations Environmental Programme
VFR – Village Forest Reserve
VFM – Village Forest Management
WWF – World Wildlife Fund for Nature